THE MAGAZINE OF

Standards

Safety in Paper Making (page 74)

MARCH 1957

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IN THIS ISSUE

Features

Why Does The Standard Requirement Mean Safety? By Ralph N. S. Merritt 65
Is There a Difference? The Role of the "Standards Engineer" and the "Engineer in Standards." By Fulton R. Magill 67
Maximum Permissible Exposures of Man to Radiation By Lauriston S. Taylor 69
Do You Really "See Red"? By J. A. Caffiaux 72
Safety in Paper Making. By H. B. Goodrich 74
What the Plumbing Code Means to You. By Malcolm A. Bouton 76
Are These Cases Work Injuries? 79

News

Your Nominations Are Invited for the Standards Medal and the Howard Coonley Medal 82
Barron and Krefeld Head Construction Standards Board 85
News Briefs 86
Gaillard Seminar 88

Departments

From Other Countries 81
What Is Your Question? 83
Books 84
American Standards Under Way 89
What's New on American Standards Projects 90
Standards Outlook. By Leo B. Moore 91

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Officers
H. Thomas Hallowell, Jr, *President*
Vice Admiral G. F. Hussey, Jr, USN (Ret), *Managing Director and Secretary*
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Ruth E. Mason, *Editor* Sheila Dressner, *Art and Production Editor*

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MARGINAL NOTES

Standards in Nuclear Energy—

It is encouraging that standards are being recognized as vitally important in plans going forward for use of nuclear energy by industry. Last month the members of the ASA staff took part in a two-day meeting on "Utilization of Nuclear Energy Standards by State Governments." This conference was sponsored by the Atomic Industrial Forum. This month, ASA participated in a session on standards during the 1957 Nuclear Congress at Philadelphia.

And in this issue, THE MAGAZINE OF STANDARDS reports the recommendations of the National Committee on Radiation Protection concerning the amount of radiation exposure that should be permitted for human beings.

As pointed out by the U. S. Department of Labor's *Safety Standards*, many difficulties arise when an attempt is made to codify these recommendations into rules or codes. First, since the result of radiation accumulates, it is important that some record be made of the amount of exposure each individual has had. At the present time, however, no device is known to measure and record radiation exposure for each individual, *Safety Standards* reports. Second, it is important to limit the exposure of individuals during their child-producing years. For this purpose, the National Committee recommends a permissible exposure of about 60 rem up to age 30 and an additional 50 rem up to age 40. "It is clearly more important to curtail exposure at the lower end of this age range than at the upper age range," Dr Lauriston Taylor, chairman of the National Committee on Radiation Protection, has said.

The Committee's recommendations will be before the ASA Sectional Committee on Safety Code for Industrial Use of X-Rays and Radiation, Z54, when it meets March 28. The recommendations will also be studied by the new Sectional Committee on Radiation Protection, N7,

sponsored by the Atomic Industrial Forum and the National Safety Council.

Price List of American Standards, Supplement—

All American Standards issued since publication of ASA's Price List of American Standards, Spring 1956, are now listed in a Cumulative Supplement dated February 1957. The Supplement brings you up-to-date on revisions and on approvals of new American Standards since last spring.

Send for your up-to-date supplement now. No charge.

Be sure to mail your check with your order for American Standards. A 50 cent handling charge is made by the American Standards Association when invoicing is necessary.

Microfilm Available—

If space is at a premium in your library, you may want to replace your last year's volume of THE MAGAZINE OF STANDARDS with a microfilm copy. Microfilm of each volume since 1950 is available from University Microfilms, 313 North First Street, Ann Arbor, Michigan, at $1.50 per volume.

West Virginia Pulp and Paper Co.

The Front Cover—

One of the processes in papermaking, covered by a new American Standard safety code (page 74), is cooking wood chips with a chemical solution under heat and pressure. In this process, materials such as lignin and resins are dissolved, leaving only the cellulose fibers. When the cooking process is completed, a valve is opened at the bottom of the digester and the pulp and cooking liquor is blown into tile pits.

This Month's Standards Personality

ANNE J. RICHTER, book editor and director of the R. R. Bowker Company, publishers, and chairman of ASA's Z39 Subcommittee on Indexing, is this year's outstanding bookwoman. Last month, Mrs Richter received the Constance Lindsay Skinner award, presented annually by the Women's National Book Association for an outstanding contribution made by a woman to the world of books.

Mrs Richter's contribution to books included a contribution to standards. She is the Special Libraries Association's representative on ASA Sectional Committee Z39, Standardization in the Field of Libary Work and Documentation. When the committee decided to tackle a problem that had been bothering publishers and librarians for many years, that of Standards for Indexes, Mrs Richter accepted the responsibility for doing something about it. Through her initiative and enthusiasm she has brought together an outstanding group of individuals, representing such authorities as the Encyclopedia Britannica; the Encyclopedia Americana; the Library of Congress; H. W. Wilson Company's International Index; American Association of University Publishers; Catholic Library Association; University of Chicago Press; Columbia University Press; New York Times Index; and the United Nations Library. It is the task of Mrs Richter's subcommittee to determine whether uniform principles or standard requirements can be codified for all the various types of indexes—as a guide to indexers and an aid to index users.

In addition to the standards committees, Mrs Richter is a member of the Board of Managers of the Booksellers League, and is chairman of a course in Modern Books and Publishing given by the Women's National Book Association in cooperation with the Bureau of Libraries, New York City Board of Education.

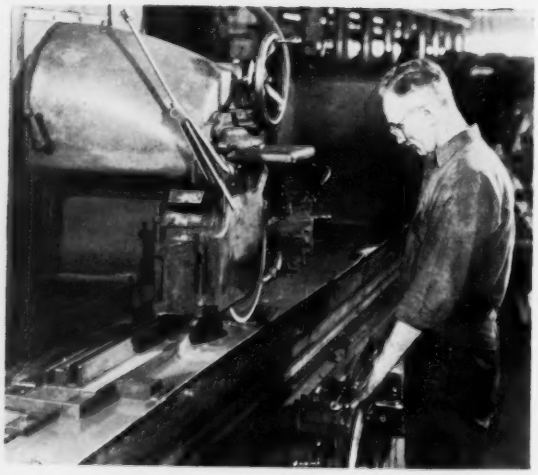
She combines her career as bookwoman with her career as wife and mother. Her son, Eugene, known as Ricky, is now a student at the Harvard Business School. Mrs Richter and her husband like nothing better than to spend a weekend at their small house on an island in Lake Gerard, New Jersey, where Ricky joins them at vacation time.

Mrs Richter's career is best indicated in the citation for the Constance Lindsay Skinner award. It says in part:

"As skilled editor and one of the directors of R. R. Bowker Company, she has worked with alertness, initiative, and patience to develop such indispensable reference books and trade tools as *The Literary Market Place*, *The American Book Trade Directory*, and *The American School Libraries Directory*.

"As diplomat and one-woman-information center she has served the book industry as one of its wisest and best public relations officers, approaching problems with perspective and intelligence, always ready with whatever assistance is needed."

Photos: Norton Company



The adjustable tongue shown on this safety guard meets requirements for "exposure adjustment" (Section 5.9) in the new American Standard safety code for grinding wheels. These men are snagging malleable iron castings on 30-inch high-speed floorstand grinders (above).

●

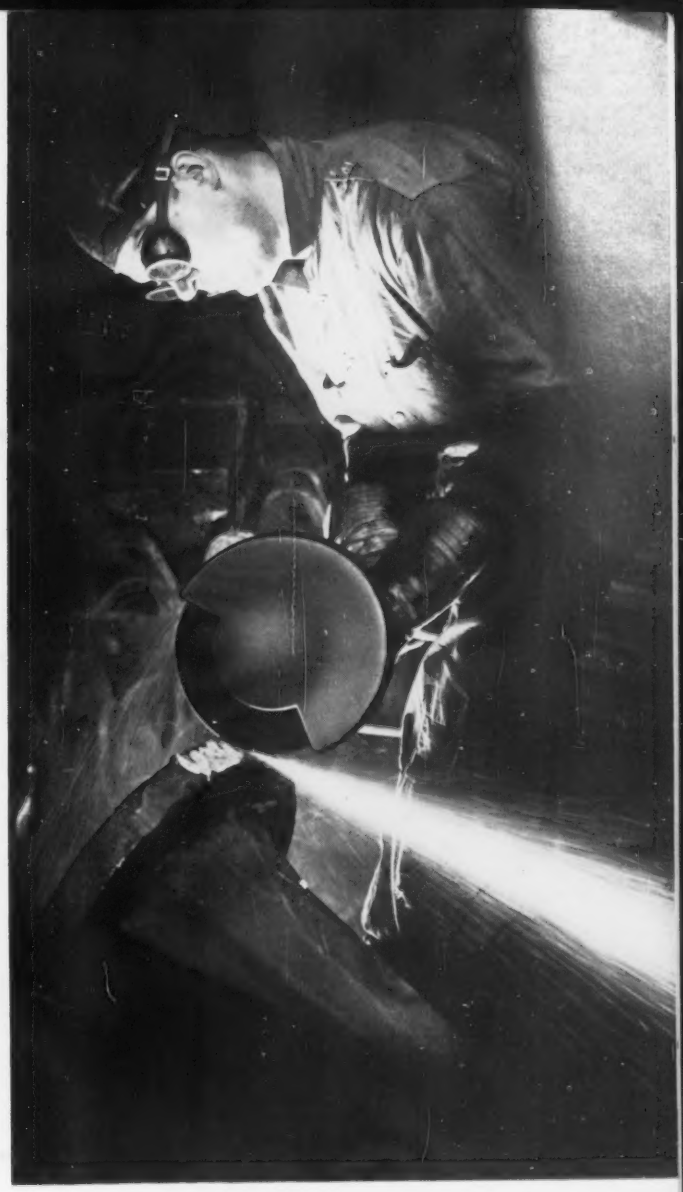
Surface grinding a machine tool casting (left). Because the grinding wheels are extra wide, the safety guard is designed with rugged proportions.

●

Snagging steel castings with high-speed portable grinder (above, right). Safety guard more than meets standard requirements that maximum angular exposure of grinding wheel periphery and sides shall not exceed 180 degrees (Section 5.7).

Why Does The Standard Requirement Mean Safety?

New standard explains requirements for grinding wheels; committee expects increased use of American Standard code



by **Ralph N. S. Merritt**

Mr Merritt is Products Safety Engineer, Norton Company, and secretary of ASA Sectional Committee B7 on Safety Code for the Use, Care, and Protection of Abrasive Wheels.

THE SAFE use of grinding wheels has been covered by an American Standard safety code since 1922. Strict compliance with the code, by manufacturers of abrasive wheels and grinding machines, as well as by the grinding machine operators, has resulted in an excellent record of safety.

Many states have adopted the American Standard. Other states that do not themselves have comprehensive grinding wheel codes accept the American Standard by co-operative agreement in lieu of a state code. As a matter of fact, the American Standard Safety Code for Use, Care, and Protection of Abrasive Wheels, the most recent edition of which is B7.1-1956, has become established as the universal safety code on abrasive wheel use in legal cases where state codes are lacking.

Few technical changes have been made in the new 1956 edition over the excellent former edition, B7.1-1947, but a revolutionary change in the format has been made that is expected to result in a substantial increase in use of the standard.

In considering the need for a revision of the standard, the sponsors, the International Association of Governmental Labor Officials and the Grinding Wheel Institute, were in agreement that the 1947 edition was technically excellent. They recognized, however, that the necessarily concise legal format of the code did not allow explanations which would encourage compliance.

Invariably, they have found, verbal explanation of a code regulation, giving the basic reasons for it, overcomes objections and encourages compliance. In the 1947 edition, however, an attempt at suitable explanations, given in an appendix following the section of

code regulations, was ineffective because of the difficulty of connecting the explanation with the regulations. The appendix was seldom used.

At a meeting of Sectional Committee B7 with representatives of the two sponsors to discuss an improved format, it was unanimously agreed to adopt an idea which the Bureau of Labor Standards of the United States Department of Labor had developed to encourage compliance with safety regulations. This format consists of two columns on each page. The left column is confined to code regulations only. In the right column, opposite each code regulation, appears explanatory information to encourage compliance.

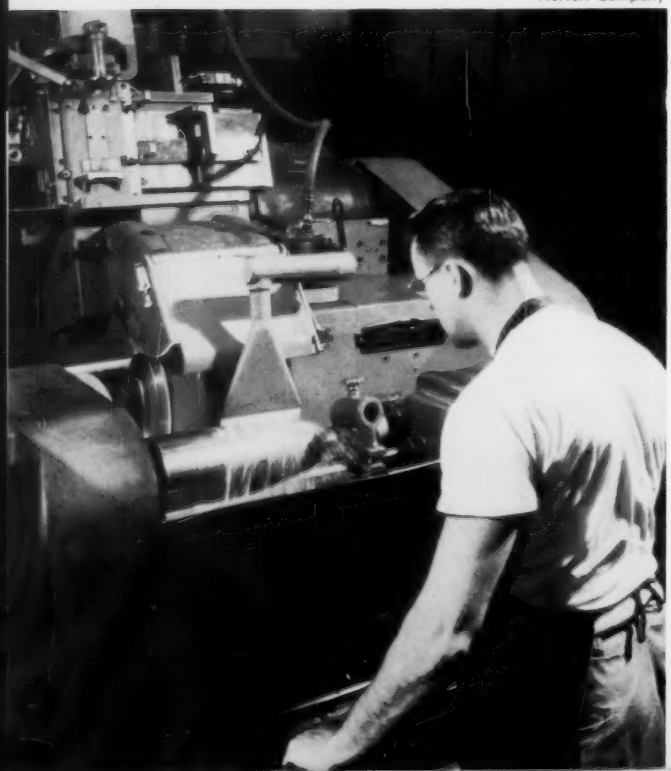
The ASA Safety Standards Board approved the new format after thorough discussion, recognizing that this improvement in safety code presentation was advantageous. The Board directed that the following restrictions be observed:

"The material in the left column is confined to code regulations and is so captioned. These regulations are printed in distinctive bold type to indicate their authority without question. Where a condensed document is required (e.g., for State Code adoption) the material in the left column, together with supporting tables and sketches, can be used as a complete code.

"The right column, captioned Explanatory Information, offers basic reasons to encourage compliance. Material appears in this second column only when it clarifies the regulation. This column should not be construed as being part of the American Standard Safety Code for the Use, Care, and Protection of Abrasive Wheels, B7.1-1956.

Grinding a shell nose punch in a semi-automatic cylindrical grinding machine (right, above). The safety guard is wide since it is designed to accommodate several wheels for multiple wheel grinding.

Norton Company



"Operating rules (safe practices) are not included in either column of this safety code unless they are of such nature as to be vital safety requirements, equal in weight to other requirements included in the code."

The resulting revision, B7.1-1956, printed in the large 8½ x 11 in. size, contains a wealth of explanatory data, photographs, and sketches to support each regulation. The necessity for observing each and every regulation can be intelligently considered and understood.

The critical nature of a production abrasive wheel is emphasized in the Foreword as follows:

"The strength of an abrasive wheel is always limited by the operation it is designed to perform, for as the outer abrasive layer becomes dull from grinding the dull grains must break free, exposing new cutting edges. This action must be progressive and continuous. Wheels of greater strength than required by the stresses set up on any particular grinding operation will not grind properly for they will not release the dulled grains.

"In these characteristics, the abrasive wheel is unique among cutting tools. But these strength limitations are no handicap to their safe use or operation as is amply demonstrated by the excellent safety record in the field of grinding."

The technical changes in American Standard B7.1-1956 are mainly additions to cover new developments in abrasive wheels and protective devices.

For example, regulations are added for the new reinforced products, including depressed center wheels.

Regulations for new types of guards are added for depressed center wheels.

New type revolving cup guards have been added for straight cup and flaring cup wheels used on portable grinders.

The old table for maximum safe speeds has been divided into two tables. One table shows standard safe maximum speeds, while the second contains special maximum safe speeds to be used only on specially designed and guarded grinders. This change emphasizes more clearly the restrictions on the use of the special speeds in the old table, which were not readily apparent.

The tables of maximum *critical* speeds for mounted wheels (secured on spindles or mandrels) in the 1947 edition have been replaced by *operating* speeds in American Standard B7.1-1956. This change eliminates the necessity of reducing the critical speeds by the required factor (usually 75 percent of the critical speed) and prevents errors in using the published critical speeds without reduction.

From the unanimous favorable comment on the revised code to date, it is apparent that users are welcoming the new development in format, with the prospect that great improvement in compliance will result.

The Grinding Wheel Institute and individual grinding wheel manufacturers are presently engaged in saturation distribution of the 1956 Code revision. Copies will be gladly furnished by any manufacturers on request, or they may be ordered from the American Standards Association.

Is There a Difference?

The role of the "Engineer in Standards" and the "Standards Engineer" in a medium-size decentralized and diversified industry

by **FULTON R. MAGILL**

STRANGE, isn't it, that there should be any question about the position of the "engineer in standards"? Standardization may not have been born in engineering, but it has certainly lived with it for a long time; and engineering has exerted a paternal guidance and control in standardization work. For this reason, it is important that we understand the distinction between the "engineer in standards" and the "standards engineer."

In general it might be said that the "engineer in standards" is that engineer who actively participates in selecting those technical or design details which are to constitute a national or company standard.

The "standards engineer," on the other hand, is a man concerned with the administration and coordination of this standards work in a manner prescribed by management.

In short, the standards engineer deals with people and data—whereas the engineer in standards deals with specialized engineering or scientific knowledge.

To prevent confusion, before continuing this article, it is necessary to emphasize its limits. It considers only a decentralized industry with diversified products. The industry is medium size, having annual gross sales of more than 50 million dollars.

We are concerned only with portraying the differences between the functions of the engineer and the standards engineer in standardizing work in this type of industry.

The term "engineer" is being applied to a member of a learned scientific or technical profession who by his training and experience is qualified to participate in establishing the technical details required by a standard.

The term "engineer in standards" is applied to the engineer who actually participates in the formation of standards. The extent of his participation is mentioned later.

The word "standard" refers to any written answer to any problem, obtained by a consensus.

Changing times have affected the engineer's role in standardization. With expanding industries there has been decentralization of operations and a diversification of products. Standardization no longer affects only drafting and design practices within a small, integrated plant. The old rules established by specialists in one plant may not be acceptable or practical in decentralized and diversified operations.

Engineering has become more specialized while company standardization work has become more comprehensive. Generally, the standardizing efforts encompass the interrelated functions of engineering, manufacturing, and purchasing in different divisions. To understand the position of the engineer in standards, consider the scope of the standards program:

In a medium-sized decentralized company which produces a diversified line of products, there may be hundreds of different products manufactured; however, they probably will fall within a half dozen basic classifications. These products will be manufactured in from 2 to 30 different plants scattered throughout the country. Product components may be made in one plant and used in another. Standards are needed to allow these operations to work together.

The standardizing effort will be designed to reduce costs through the creation of a set of standard materials; engineering design standards, drafting standards, standard material specifications; standard parts; standard ingredients, tools, etc. To accomplish this standardization, a department of from two to eight people will be needed.

This department will collect data and facts from practically all departments and divisions because its

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Mr Magill is manager of the Central Standards Department, Rockwell Manufacturing Company. His company is a member of the American Standards Association, and the company's vice-president of research and engineering, C. A. Wiken, is a member of ASA's Company Member Conference. Mr Magill, himself, is a member of the Standards Engineers Society.

standards are "engineering-purchasing-manufacturing" standards which affect them all. These data must be correlated. Data and facts from outside the company must be correlated with the internal standards work. The results are published in books of company standards.

In any company standardization work it sooner or later will be necessary to justify the cost. The savings must be greater than the cost. Management will be mostly interested in the standardization of product parts. Here is where management can find real savings.

The engineer wants design and drafting standards. If the parts are to be made in different divisions—if they are to be interchangeable—there must be design standards. If the drawings are to be made in one division and read in another, they must be as easily read in one as in another. In order to have the standard parts with their proven savings, we need the design and drafting standards.

We have mentioned reading drawings and making parts. This takes place outside the engineering department and actually means that the "engineering" standards are, in effect, manufacturing and purchasing standards. The men who read the drawings influence the standards which govern the making of the drawings as much as those who do the drafting. There are very few standards which apply only to engineers.

The engineer has an important role in standardization, but he has another definite responsibility within his company, which is of prime importance. He must design products or tools which will maintain his company's position in a competitive field and assure both management and the customer a reasonable return on each dollar invested.

He performs his work within an engineering organization which is usually of a straight-line military type. Working within the limits of his responsibilites and organzation, therefore, can the engineer also participate in a function which not only cuts through all other line organizations but occasionally extends beyond company limits?

By so doing, it might seem that the engineer is exceeding his proper function—that is, working outside his organization to contribute to the standardizing effort. It might seem he cannot do this and still perform his normal duties. But this is not true. He does not work outside the boundaries of his organization. He leaves that for the standards engineer.

The standards engineer is a member of a newly recognized profession. Any medium-size company will find it practical to use him. However, the standards engineer will have neither the time nor talent to create, by himself, all the standards which are needed. He will concentrate on obtaining answers and analyzing them. He will coordinate the work—with the full understanding that standards affect sales, advertising, accounting, industrial engineering, maintenance, manufacturing, and purchasing, as well as engineering. He will occasionally go outside his own company to find some of the material for company standards.

The standards engineer knows that standards which have value—standards which will be used—must represent the thinking of the persons who use them. He knows that in his work no one department—no single person—has more influence than another. If a problem affects only engineering, it will be handled by engineering. The same applies for manufacturing and purchasing. The standards engineer is simply the administrator of a planned effort to coordinate answers to problems which affect all three functions.

The design or plant engineer plays his important part in company standardization when he furnishes the original technical information needed to create a standard. He also makes suggestions for changes needed to assure approval by manufacturing and purchasing. And he still functions as an engineer within his organization.

As an engineer in standards, he has still another important role. Every company is influenced by national and international standards. These standards are technical or "engineering" standards of various kinds, and it is impossible for the standards engineer as such to participate in forming them. The qualified company engineer is in a position to analyze the effect of certain national standards work on his company; and in some instances he should actually participate in formation of national standards.

This participation in national standardization by the engineers of a company must be controlled. In a diversified company there will be several engineers devoting part of their time to serving on different standardizing committees of national importance. Each engineer is a specialist in some class of engineering or product design. Each standardizing committee specializes on certain types of standards.

Since national standards are interrelated—and since a company's standardization program covers the interrelationships of products, divisions, and certain departments—the engineer in standards who represents his company's interests on a national committee must know how his committee work affects his company as a whole. His activities in his company are restricted to a specialized phase of engineering. Some agency must exist to keep him informed of the impact of his standards work on other things which normally do not concern him. The standards department, or the standards engineer who is the administrator of this part of a company standardization program, is responsible for keeping him informed.

With well-balanced participation in national standards work, a company can be sure these standards will be practical, beneficial, and definitely not detrimental. The engineers in standards who serve in this matter may be considered part of the "State Department" of a company standardization program. This added function of theirs is vital—and adds an exciting and important new facet to the profession of engineering.

Maximum Permissible Exposures of Man to Radiation

THIS preliminary statement of the National Committee on Radiation Protection and Measurement was received from Lauriston S. Taylor, National Bureau of Standards, chairman of the Committee. Mr Taylor is a member of ASA's Nuclear Standards Board, representing the National Bureau of Standards. One of the projects under the Board's supervision is on Radiation Hazards.

The statement presents in brief form the essential changes introduced by the Committee's new recommendations on permissible radiation exposure. In making the new recommendations, the Committee reviewed its past recommendations in the light of increased knowledge about the long-range effects of radiation exposure on the genetic make-up and life expectancy of man.

The NCRP is an advisory group of experts in various phases of the radiation field, and is made up of representatives from the following organizations: American College of Radiology, American Dental Association, American Industrial Hygiene Association, American Medical Association, American Radium Society, American Roentgen Ray Society, International Association of Government Labor Officials, National Bureau of Standards, National Electrical Manufacturers Association, Radiological Society of North America, U.S. Air Force, U.S. Army, U.S. Atomic Energy Commission, U.S. Navy, and U.S. Public Health Service. The Committee is sponsored by the National Bureau of Standards, and its recommendations are published in the NBS Handbook series.

Because the new recommendations of the NCRP will affect material contained in many of its handbooks, revisions of the latter will be undertaken at an early date. Until these revisions are completed and ready for publication, an effort will be made to prepare for each handbook a simplified statement of the changes needed to comply with the new recommendations. These summary statements will be released to the technical journals for publication as they are completed, and will be used with the handbooks now in stock. The full and detailed changes will be incorporated in the revised editions of the handbooks.

INTRODUCTION

Since the publication of NBS Handbook 59 on Permissible Dose from External Sources of Ionizing Radiation, the National Committee on Radiation Protection and Measurement (NCRP) has continued the study and review of its recommendations, particularly with respect to genetic effects and the possible shortening of average life expectancy due to radiation exposure of a larger fraction of the population. The NCRP proposals resulting from these studies had an important influence on the decisions reached by the International Commission on Radiological Protection (ICRP) in Geneva in April 1956, which resulted in a general lowering of the maximum permissible accumulated dose (MPD) for occupational radiation exposures, as well as for exposures of the population as a whole. These changes are in accord with the informal agreements reached by the ICRP in Stockholm in 1952.

The NCRP has now agreed upon the formulation of revised recommendations on maximum permissible doses which integrate the national and international views for practical application. The Committee is pleased to note that the findings of the ICRP are reinforced by the important information and data provided in the subsequent reports of the National Academy of Sciences and the British Medical Research Council.

The changes in the accumulated MPD are not the results of positive evidence of damage due to use of the earlier permissible dose levels, but rather are based on the desire to bring the MPD into accord with the trends of scientific opinion; it is recognized that there are still many uncertainties in the available data and information. Consideration has also been given to the probability of a large future increase in radiation uses. In spite of the trends, it is believed that the risk involved in delaying the activation of these recommendations is very small if not negligible. Conditions in existing installations should be modified to meet the new recommendations as soon as practicable, and the new MPD limits should be used in the design and planning of future apparatus and installations. Because of the impact of these changes and the time required to modify existing equipment and installations, it is recommended on the basis of present knowledge that a conversion period of not more than five years be adopted within which time all necessary modifications should be completed.

Plastic boots, rubber gloves, masks, and head gear are worn for protection, and constant checks are made to assure safety of employees working in radiation areas. Here health physicists make radiation level check with a survey meter (held by man at left.)

DEFINITIONS

For the purposes of this preliminary statement, the following tentative definitions are given:

Controlled Area. A defined area in which the occupational exposure of personnel to radiation or to radioactive material is under the supervision of a radiation safety officer. (This implies that a controlled area is one that requires control of access, occupancy, and working conditions for radiation protection purposes.)

Workload. The output of a radiation machine or a radioactive source integrated over a suitable time and expressed in appropriate units.

Occupancy Factor. The factor by which the workload should be multiplied to correct for the degree or type of occupancy of the area in question.

RBE Dose. RBE stands for relative biological effectiveness. An RBE dose is the dose measured in rems. (This is discussed in the forthcoming report of the International Commission on Radiological Units and Measurement.)

MPD RECOMMENDATIONS FOR OCCUPATIONAL CONDITIONS (CONTROLLED AREAS)

1. Accumulated Dose. The maximum permissible accumulated dose, in rems, at any age, is equal to five times the number of years beyond age 18, provided no annual increment exceeds 15 rems. Thus the accumulated MPD=5(N—18) rems where N is the age and greater than 18. This applies to all critical organs except the skin, for which the value is double.

2. Weekly Dose. The previous permissible weekly whole-body dose of 0.3 rem, and the 13-week dose of 3 rems when the weekly limit is exceeded, are still considered to be the weekly MPD with the above restriction for accumulated dose.

3. Emergency Dose. An accidental or emergency dose of 25 rems to the whole body, occurring only once in the lifetime of the person, shall be assumed to have no effect on the radiation tolerance status of that person. (See National Bureau of Standards Handbook 59.)

4. Medical Dose. Radiation exposures resulting from necessary medical and dental procedures shall be assumed to have no effect on the radiation tolerance status of the person concerned.

MPD RECOMMENDATIONS FOR THE WHOLE POPULATION

5. The maximum permissible dose to the gonads for the population of the United States as a whole from all sources of radiation, including medical and other man-made sources, and background, shall not exceed 14 million rems per million of population over the period from conception up to age 30, and one-third that amount in each decade thereafter. Averaging should be done for the population group in which crossbreeding may be expected.

RECOMMENDATIONS FOR INTERNAL EMITTERS

6. In controlled areas, the permissible radiation levels for internal emitters will conform to the general principles outlined above. Where the critical organ is the gonad or the whole body, the maximum permissible concentrations of radionuclides in air and water will be one-third the values heretofore specified for radiation workers. Where single organs other than the gonads are regarded as the critical organ, the present maximum permissible concentrations will continue. For individuals outside of controlled areas, the maximum permissible concentrations should be one-tenth of those for occupational exposures. (Other changes in the maximum permissible concentrations for radionuclides may be introduced because of additional information developed since the publication of National Bureau of Standards Handbook 52.)

DISCUSSION OF REVISED RECOMMENDATIONS

7. The MPD for occupational exposure is based on the absence of detectable injury to the individual. It remains at its present level of 0.3 rem per week for the whole body. Where the dose in any week exceeds this value, a dose of 3 rems in 13 weeks may be accepted. The 13-week period may start at the beginning of the calendar quarter or the beginning of the week during which the permissible weekly dose was exceeded.

8. The rules given in Handbook 59 will be continued for operational and administrative purposes, but some of the rules will be modified by provisions related to an average yearly limitation of occupational exposure to external sources of ionizing radiation of 5 rems to the blood-forming organs, gonads, and lens of the eyes, and of 10 rems to the skin. The use of "5 rems" in the statement of the revised rules is for the purpose of design and administration. The critical limitation will be that defined for the total accumulated dose in paragraph 1 above.

9. If a person's occupational exposure is documented or otherwise known with reasonable certainty, he may be permitted to use his reserve exposure in accordance with paragraphs 1 and 2 above. In all other cases, he shall be assumed to have received his maximum accumulated dose as indicated in paragraph 1 above.

10. It is considered that with the current and proposed low levels of occupational exposure, it is presently not necessary to make special allowance for medical exposure in conjunction with occupational exposure. This consideration may later become important. The effects of medical exposures have long been considered by this Committee to be the responsibility of the attending physician; it is his responsibility to evaluate medical radiation exposure in relation to the health of the individual. (See National Bureau of Standards Handbook 59.)

11. In the determination of the population dose in the vicinity of radiation sources, proper consideration should be given to occupancy factor and to workload. The exposure of individuals outside of controlled areas may be integrated over periods up to one year.

12. While at the moment it is not feasible to determine the average exposure for the population with any reasonable accuracy, the adoption of some figure is necessary for planning purposes. For the immediate future, it may be assumed that the total integrated RBE dose received by all radiation workers will be small in comparison with the integrated RBE dose of the whole population. Furthermore, persons outside of controlled areas, but exposed to radiation from a controlled area, constitute only a small portion of the whole population. Therefore, if this small portion is assumed to receive yearly an average per capita dose of 0.5 rem, the total dose to the whole population from man-made radiations is not likely to exceed 10 million rems per million of population up to age 30. (This assumes a dose of 4 million rems per million of population over this age period from background radiation.)

Radiation survey meter is used above to measure intensity of radioactivity of specimens on the floor of a "hot lab" cell. The door to cell is made of steel 10 inches thick, and the glass window is 36 inches thick. Below, an irradiation survey meter monitors the area near a radioactive sprue bushing being used for test with plastics material. The meter determines safe working limits for personnel.

Do You Really "See Red"?

New American Standard on Color Coding for Numerical Values

by **J. A. Caffiaux**

Staff Engineer, Engineering Department

Radio-Electronics-Television Manufacturers Association

THE ELECTRONICS industry now has available, for the first time, a comprehensive standard describing the colors recommended for indicating numerical values, decimal multipliers, tolerances, and functions. Colored plastic chips corresponding to these colors are also available for visual comparison with the item being inspected. These colors are intended for use in the marking of components such as resistors, capacitors, and wires in a manner described in the industry standards for these items. In addition, the use of these colors is recommended for the identification of terminals and circuit functions, and any other application where the relation of colors to numbers or functions would be advantageous.

The origin of this standard may be traced back to 1931 at which time the Radio Manufacturers Association (RMA) adopted standard M4-213 on Color Codes for Resistors. This standard used as a reference eight colors listed on the Standard Color Card of America (eighth edition) issued by the Textile Color Card Association (TCCA) in 1928. No standards were used to describe Black or White, nor were any color tolerances specified. This standard remained in effect until December 1955 although during the interim years the colors were referenced to the ninth edition of the TCCA Color Card which included a reference to white, and the RMA standard had become RETMA Standard GEN-101.

However, there were two serious shortcomings to GEN-101, namely:

(a) the lack of specified color tolerances

(b) the lack of actual color samples

Thus it was not uncommon for dark reds to be mistaken for brown, off-whites for pale yellow, dark browns for black, etc.

The RETMA Engineering Department Staff Committee on Colors and Numbers, recognizing these defects, formulated the proposed standard which became RETMA Standard GEN-101A and ultimately American Standard C83.1-1956, which contains not only a complete description of the standard nominal colors but also defines the pale and dark limits of each color. The utility of this standard was greatly extended by making available a supplemental set of plastic color chip samples which permit actual visual comparison of the color-marked item being inspected.

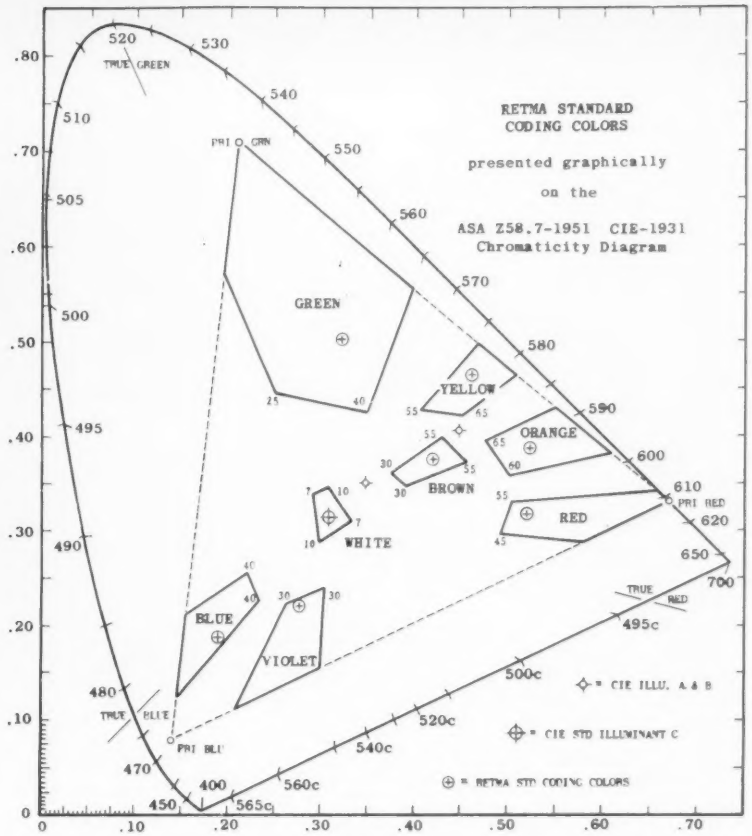
The new standard is divided into five sections which, in addition to the standard color code itself (Section 1), also describes the nominal color samples (Section 2), defines the visual and colorimetric limits with hints on how to compare colors (Section 3), gives helpful information on maintaining maximum readability and color permanence (Section 4), and provides additional data on non standard colors (Section 5).

The relation of the Standard Coding Colors to the American Standard-CIE Chromaticity Diagram (contained in American Standard Method for Determination of Color Specifications, Z58.7.2-1951) is shown in a graphical presentation.

The Standard Color Code section relates the ten standard colors to their numerical figures, decimal multipliers, and value tolerances and, in addition, lists standard (3-letter) and alternate (1-letter) abbreviations for these colors.

Nominal Color Samples are described in terms of the Ostwald Color Notation as presented in the Color Harmony Manual 3rd Edition, and, in addition, are identified by their X and Y coordinates on the chroma-

The chips pictured above show the shape and size of the plastic color chips which supplement American Standard C83.1-1956. Symbols printed on and under the chips are the Ostwald color notations.



Chromaticity diagram from American Standard Z58.7-1951, adapted to show standard coding colors.

ticity diagram (American Standard Z58.7-1951, CIE 1931). This section also gives the Dominant Wavelength, Purity, and Reflectance of each color.

Color limits, that is, the light and dark deviations from the nominal, are specified in the section on Visual and Colorimetric Standards. These limit colors are identified by their Ostwald chip number as well as in terms of a minimum and maximum variation of the Dominant Wavelength. Variations in Purity and Reflectance accompany these data and recommendations are also given describing the lighting of samples for accurate comparison.

Maintaining Maximum Readability covers a miscellany of helpful information, including Color Permanence and supplemental ASTM standards and American Standards. Emphasized in this section is the fact that "a color code is worthless if it cannot be read."

In recognition of the current practice of utilizing colors other than the standard colors, this section of the standard, while not recommending the use of non-standard colors, does contain information on ten "secondary" colors as an aid to industry. Typical of the "secondary" colors are Tan, Pink, Maroon, Lime, Jade, and others.

An extremely important supplement to this standard, consisting of actual color chips, is also available. A set of the ten nominal color chips is available as is a complete set of 28 nominal and limit samples. All sample chips are precisely colored plastic hexagons approximately 1 square inch and are housed in an attractive folio which will serve as a permanent receptacle for many years. Each chip is numbered to its proper position in the folio. Chips are glossy on one side and flat on the other, and may be washed if they become soiled.

Considerable credit is due the Color Standards Division of the Container Corporation of America for their cooperation in the preparation of the Supplemental Color Chip samples.

Copies of American Standard Color Coding for Numerical Values, C83.1-1956, are available at 50 cents each from the American Standards Association, 70 East 45th Street, New York, N. Y.

Copies of the Supplemental Color Chip Charts are available at $8.00 for a set of the ten nominal colors and $20.00 for a complete set of the 28 nominal and limit colors. Orders for these color samples should be directed to RETMA Engineering Office, Room 650, 11 West 42nd Street, New York 36, N.Y.

Here are some of the processes in paper making, now covered by an up-to-date American Standard safety code. Above, in an initial step, pulp logs are tumbled in the barking drum, where bark is removed and logs are washed free of dirt.

After the logs are barked and cleaned and inspected to see that all bark and loose dirt have been removed, they are fed into chippers which reduce the wood to small chips about ⅝ of an inch square and 1/16 of an inch thick.

SAFETY IN PAPER MAKING

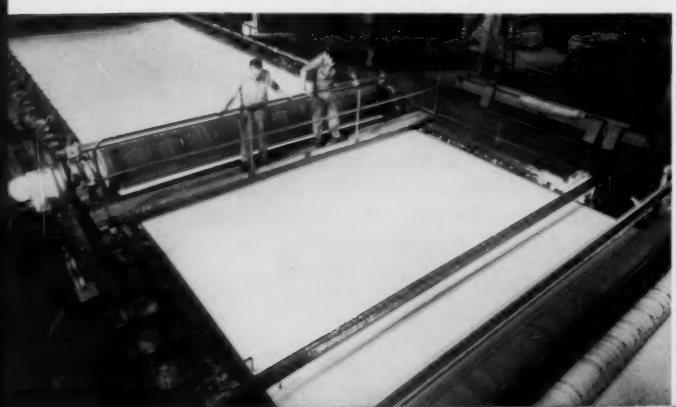
by **H. B. Goodrich**
Chairman, Sectional Committee P1
Maintenance Engineer, Strathmore Paper Company

STARTING with the delivery of the wood, a new American Standard Safety Code offers recommendations for safety in all the operations of a pulp and paper mill. Prepared under the joint sponsorship of the American Paper and Pulp Association and the National Safety Council, the new safety standard replaces American Standard P1-1936. This is not a revision of the 1936 standard, which is now more than 20 years old and has been out of print for some time. It is a completely rewritten safety standard that now includes many departments not in the earlier edition.

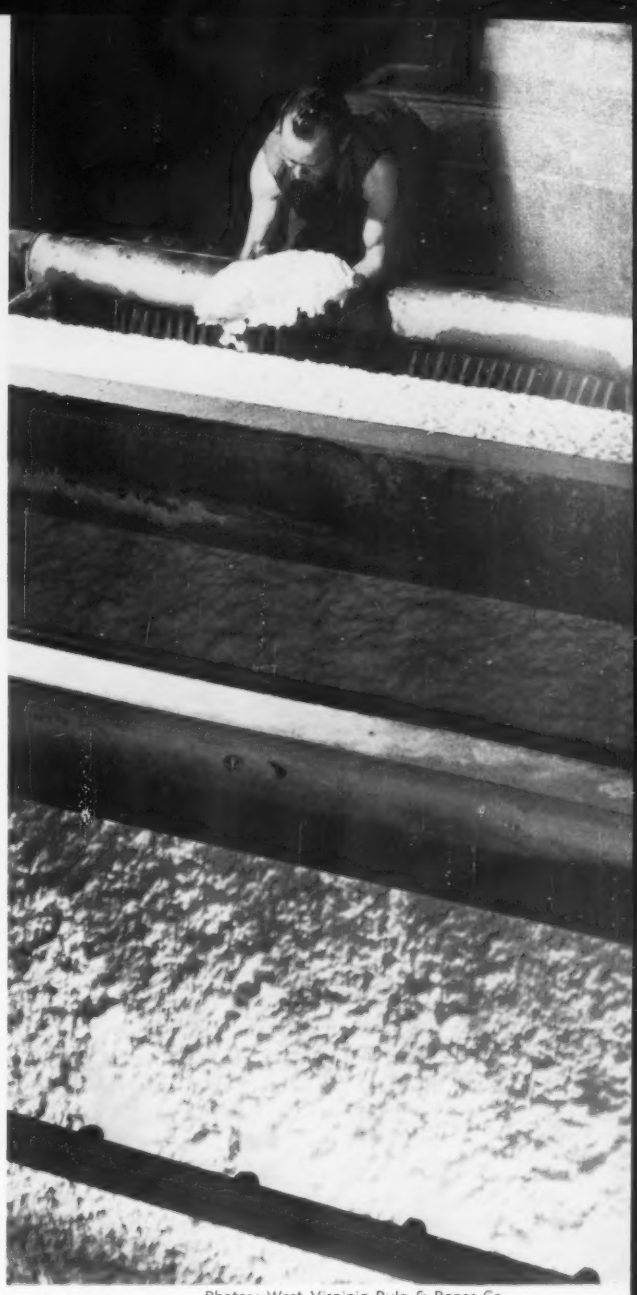
The Code starts with the use of cranes or stackers in removal of the wood from ships, unloading from flat cars, and handling from trucks. It also gives consideration to the handling and storage of other raw materials.

Some chapters are devoted to the preparation of pulp wood, including the saws, hand and machine barking, splitters, and chippers. The preparation of rags and old papers is given consideration, as are rag dusting, shredding, and cutting machinery. The chemical and mechanical processes of making wood pulp, including bleaching and chlorine equipment, have been included. In the beater room section, not only the beaters and washers have been considered, but also the newer machines. The section on the Finishing Room has been considerably enlarged to include super calenders, cutting and trimming machinery, platers, embossers, re-

At the "wet" end of paper machine (below) pulp fibers form a wet sheet on endless bronze wire as water is drained off—first stage of actual paper making.



After rolls of paper are prepared according to the customer's requirements, the rolls are wrapped, labeled, and weighed for shipment, as in shipping room below.



Raw pulp must be bleached to remove natural amber color (right) before beater (above) separates fibers, reduces them to proper length, and slightly frays ends and sides so they will matt together properly on papermaking machine.

winders, and sorting. New sections on materials handling, shipping, and receiving have been added.

The Code committee was made up of representatives of the pulp and paper industry, trade associations, labor unions, insurance companies, manufacturers of pulp and paper mill machinery and equipment, and government units.

In addition to the general committee, several subcommittees were formed. The general committee held several sessions in New York City. Much assistance was given by the Executive Committee of the Pulp and Paper Section of the National Safety Council.

The Pulp and Paper Section considered the new Code at the National Safety Council's 1956 Congress in Chicago and has expressed great satisfaction with the accomplishment of the committee.

Copies of the American Standard Safety Code for Paper and Pulp Mills, P1.1-1956, are now available from the American Standards Association, at $1.00 each.

Photos: West Virginia Pulp & Paper Co

For sheet paper, rolls from paper machines are sent to cutters, like this high-speed multiple cutter, where paper is cut into sheets. Trimmer gives it exact dimensions.

Sheet paper is wrapped in bundles, or packed in cases, cartons, or on skids for shipping. Fork-truck operator below is stacking skids of paper before shipping.

What the Plumbing Code Means to You

Reprint of an article by Malcolm A. Bouton, M.D., M.P.H., F.A.P.H.A., published in the November 1956 issue of the American Journal of Public Health, under the title "Plumbing Codes in Public Health."

Dr. Bouton is Commissioner of Health, City Health Department, Schenectady, New York.

TO every American a public water supply is ipso facto a safe one. Yet a public water supply is always a potential hazard to the health of the public it serves, since without constant and adequate safeguards it can suddenly become the vehicle of a communicable disease, affecting large numbers of persons who have innocently and justifiably placed their faith in those to whom they have delegated the responsibility for its safety and purity.

Between the years 1920 and 1929 there were 242 epidemics of typhoid fever and dysentery reported in these sanitation-conscious United States, resulting in 9,367 cases of typhoid fever and 84,345 of dysentery, with 630 deaths. Thirty-five per cent of these epidemics occurred in cities having populations of over 5,000 and served by public water supplies, several being reported from major metropolitan centers of this country. Perhaps the most famous and frequently referred to example of this type outlbreak is the epidemic of amoebic dysentery during the Chicago World's Fair in 1933, which by June, 1934, had resulted in 932 cases and 52 deaths throughout the United States and Canada. Investigation of that outbreak, which originated in two first-class Chicago hotels revealed, as is well known, antiquated plumbing and cross-connections between potable water supplies and other supplies subject to potential pollution. Cross-connections between potable and non-potable water systems and with sewers permitted the potable water supplies to become contaminated when the sewers became surcharged as a result of heavy rain. Broken sewer lines flooded an area where food and ice were stored, prepared, and handled.

Reference is made to these epidemics merely to point out the obvious fact that, even in the light of present-day public health knowledge and engineering knowhow, conquered diseases of the past can return to plague us if we relax our defenses. Fortunately such outbreaks are exceptions. In fact one of the greater achievements in American public health has been the virtual wiping out of those communicable diseases which are transmitted through drinking water polluted by human waste. In this work health agencies, acting under the police powers reserved to the states in the federal Constitution, have made wide use of plumbing codes of various types. For years such regulations remained scattered and fragmentary; 15 years ago it was estimated that 1,600 plumbing codes were in use in this country, all of them different.

Aside from the confusion and lack of uniformity caused by a multiplicity of different codes, there are special problems inherent in the development and enforcement of codes at the local level which are obviated when the code is standardized at the state or national level. At the grass roots code drafters are too close to special interest and pressure groups to which they may be too sensitive and vulnerable. For example, organizations claiming to represent the interests of the homeowner, such as homeowners' associations and the like, may go to great lengths to force provisions into the code which will allow the homeowner to do all his own plumbing within the four walls of his home. Homeowner plumbing is a dangerous practice from the public health point of view and yet, if it is disallowed, cries of infringement on the rights of the individual arise. Granted there is always a certain amount of homeowner plumbing done outside the law, much of which can be discovered sooner or later by an alert plumbing inspector. However, to let down the bars completely, even if the homeowner is required to pass an examination and secure a permit, is as impractical as it is dangerous. Plumbing inspectors have a difficult enough time keeping track of the work of licensed contractors.

Those in the position of selling fixtures are also deeply interested in a code during its drafting stage. They may side with the homeowner if they stand to gain financially and may exert pressure regarding the use of the materials which will earn them the most profit. A most awkward situation may arise if an influential politician also happens to be in the plumbing fixture business, or has a friend in it. Let us not forget the purely political angle, since code provisions or the lack of them may, if the political climate is right, be greatly influenced by temporary political expediency. Given the proper setting a new plumbing code can become a wonderful "political football" at the local level.

Granted there are lobbies and political considerations at the state and national levels, but code development at those levels will usually be much less harrassed by the petty interests we have been discussing. If, however, an attempt is made to draft a code locally, the working committee should have broad representation among its members, including architects, building contractors, plumbing contractors, journeyman plumbers, consulting engineers, the health department, and the homeowners.

Enforcement problems, too, are greater when each community is operating under a different code. The local plumbing contractors are, of course, familiar with the particular code under which they do most of their work; and conversely, the plumbing inspector is familiar with the individual idiosyncrasies of the plumbing contractors with whom he is constantly dealing. If the plumbing inspector is competent and respected by the contractors in his jurisdiction, and this of course is most important, enforcement will go along very smoothly on the jobs being done by these men. Also, larger contracting firms, while they may be from out of town, seldom cause difficulties in code enforcement matters, since they have more to lose than to gain by doing an inferior job. One of the chief problems is the smaller out-of-town contractor who frequently operates by taking out his permit under the name of a locally licensed person and then proceeds to disregard the local plumbing code. More frequently than not he will neglect to ask for inspections until the job is completed, if he does so at all. Either because of incompetency or desire to "cut corners" these contractors often violate the code as flagrantly as the homeowner, "do-it-yourself" plumber.

Here, again, a standard uniform plumbing code at the state or national level would obviate some of the enforcement problems, particularly if it were combined with a system of state licensure. There is no reason for the separate licensing of the plumbers in each community through an examining board of plumbers nor for the requirement that an outside contractor either take the local examination or operate under the license of a locally licensed contractor. This leads directly to the enforcement difficulties mentioned above and creates a perfect situation for illegal payments on the side for the privilege of being covered by a license.

The health officer is concerned by all this, since inadequate codes and poor enforcement mean more than merely a poor plumbing job. To him they signify possible contamination of the public water supply and disease. Health officers close to these problems are confident that a standardized code and state licensure will go a long way toward solving problems which are especially acute in certain areas. It might be pointed out here that many states have states codes, both with and without state-wide licensure of plumbers; while others have state licensure without a code. The state of Indiana, for instance, adopted a plumbing code in the early 1920's which was amended in 1943. As a matter of fact, the need for a generally accepted standard has long been recognized by public health officers, sanitary and mechanical engineers, building officials, and master plumbers.

One of the earliest efforts in this direction was made by the Subcommittee on Plumbing of the Building Code Committee of the U. S. Department of Commerce, which in 1924 published "Recommended Minimum Requirements for Plumbing in Dwellings and Similar Buildings."

In the American Standards Association, a Sectional Committee on Minimum Requirements for Plumbing and Standardization of Plumbing Equipment, A40, was organized in 1928. When, in 1934, the Subcommittee on Plumbing in the Department of Commerce was discontinued, the ASA set its own Sectional Committee, A40, the task of establishing minimum requirements for plumbing.

After considerable delay and a number of false starts a successor subcommittee, representing 30 national organizations and government bodies, submitted to ASA a Standard Plumbing Code for approval and designation as an American Standard; this was approved on February 17, 1949.

The sponsors of this project, however, recognized that several other plumbing standards had achieved substantial acceptance in this country. A committee representing organizations sponsoring plumbing codes was, accordingly, set up to coordinate the requirements of these codes. The findings and recommendations of this group were incorporated in a "Report of the Co-ordinating Committee for a National Plumbing Code," issued in 1951.

The report was based on laboratory research in the phenomena of hydraulics and pneumatics within a plumbing service and on the considerable practical experience of committee members. Municipalities in need of an up-to-date plumbing code recognized that this report could serve as a basis for an improved American Standard.

The sponsors, therefore, conducted a survey of organizations interested in the A40 project and found the response "overwhelmingly favorable." Suggestions for improvement were considered by the Co-ordinating Committee and incorporated in the draft of a proposed American Standard National Plumbing Code. The proposed standard, submitted to the American Standards Association, was designated an American Standard under date of January 25, 1955.

The American Public Health Association has been prominently identified with these standards; it was co-sponsor with the American Society of Mechanical Engineers of both ASA plumbing standards, and it was represented on the Co-ordinating Committee which issued the "Report for a National Plumbing Code." The American Society of Sanitary Engineering, the Conference of State Sanitary Engineers, the National Association of Plumbing Contractors, the Building Officials Conference of America, and the Western Plumbing Officials Association were also prominent in this project.

A parallel development in code writing which may have useful possibilities elsewhere has been under way in New York state for several years past. A law enacted in that state in 1949 set up a Building Code Commission to formulate a state-wide uniform code for the construction of buildings. A state code, the final section of which was recently completed, has so far achieved voluntary acceptance in 200 cities, towns, and villages.

The state code is formulated in terms of "performance objectives," as required by the law under which the Code Commission was organized. This means that its provisions define the objectives to be attained in building without freezing into law the specific methods or means of attaining them, a principle which applies to the plumbing as well as the other provisions of the state code.

The New York State Building Code Commission has also recognized all three of the national plumbing standards; installations which meet the requirements of any of those standards are considered as satisfying the provisions of the state code. The three national plumbing codes contain specifications of materials and methods in considerably greater detail than does the state code, which is written in "performance" language.

To supplement the performance requirements of its code and facilitate its interpretation and use, the State Building Code Commission has, however, published a Code Manual, which does give specification details. This manual describes and illustrates acceptable ways of meeting the performance requirements of the code, although only the code has the force of law in the communities which use it.

Other basic differences in approach to code problems are exemplified by different standards, some of which raise questions of inspection and enforcement. In a foreword to "A Proposed Housing Ordinance," published in 1952 by the American Public Health Association, Dr. C.-E. A. Winslow pointed out: "The suggestion that a housing ordinance should be enacted by the health officer does not imply any infringement of the powers and duties of building departments or fire departments. . . . The adoption by the health department of sound and well balanced codes dealing with the health aspects of occupied dwellings may perhaps lead to instructive comparison of overlapping features of health codes and building codes and to gradual voluntary modification and improvement of both."

An article in the November, 1953, issue of the American Journal of Public Health entitled, "Housing Supervision in a Local Health Department," also points to some of the other problems of health officers in housing inspection. "It was . . . impossible for any one city department to assume responsibility for the enforcement of all the laws emanating from the Police Department, Fire Department, Zoning Board, and the Public Health Department. By mutual agreement, it was decided that the Health Department sanitarian should serve as the controller for all the inspection services. . . . If problems were found which necessitated plumbing inspection, electrical inspection, or enforcement of the Building Code, these divisions might then be called into action."

The public health officer finds himself increasingly involved in the code problems of every department of municipal government, and there are no easy solutions to these problems. But it is clear that he cannot delegate his function in this area of public health to local plumbers, whose responsibility and interest may be quite different from his own.

It is also apparent that the public health officer has a growing awareness of his larger role in the movements of code reform which have been discussed here. The series of publications on basic principles and standards of healthful housing, issued over a period of 20 years by the American Public Health Association, is good evidence of this.

The National Plumbing Code was approved a year ago by the American Standards Association. A technical committee under the leadership of the Public Health Service has been organized to continue the ever-present review and revision necessary to keep such a vital code up to date. The work of drafting a national plumbing standard necessitates, during the years of its preparation, considerable field research and laboratory tests at such centers as the National Bureau of Standards, University of Iowa, University of Illinois, the Public Health Environmental Center in Cincinnati, and other nationally recognized laboratories. The combined knowledge of professional, industry, and government groups participating in this work includes every aspect of plumbing.

The New York State Building Code Commission is also preparing a separate plumbing section in which the plumbing provisions of its own building code and Code Manual will be coordinated with those of the American Standard National Plumbing Code.

Each of these efforts—despite difficulties and obstacles—is another step toward code uniformity and improved inspection and administration. Public health officers have an important stake in these developments.

Several years ago the Committee on the Hygiene of Housing of the APHA formulated "An Appraisal Method for Measuring the Quality of Housing," an attempt to devise a quantitative technique for inspecting and evaluating housing quality. Similarly, the prime objective of the "performance-type" code is the quantitative presentation of the performance characteristics of materials and equipment. The successive national plumbing standards, too, have been increasingly based on research and testing. The dominating trends in each instance are in the direction of measurement and standardization.

The goals of public health will be well served by a furtherance of these trends.

Are These Cases Work Injuries?

Rulings of the Committee on Interpretations are now being issued on whether unusual industrial injury cases are to be counted as "work injuries" under the revised edition of American Standard Method of Recording and Measuring Work-Injury Experience, Z16.1-1954. Sponsors of ASA Sectional Committee Z16 are the National Safety Council and the Accident Prevention Department of the Association of Casualty and Surety Companies.

Case numbers in the new series start with 400. The cases below represent the seventh installment in the series under the revised edition of the standard. The numbers in parentheses refer to those paragraphs in the standard to which the cases most closely apply.

Cases 400-450 have been reprinted with an index prepared by the National Safety Council. To make it easy to locate all cases applying to any section of the standard, the index is arranged both numerically by paragraph number of the standard and numerically by case number. Each index reference includes a brief description of the case. Reprints are 50 cents per copy, available from ASA. Liberal discounts are offered for quantity orders.

As soon as the second 50 cases have been published, this index will be revised and republished to include all 100 cases.

CASE 469. (5.3)

On September 14, an employee reported to the plant dispensary for treatment of an injured left knee. The employee stated that the injury had occurred while at home. The company doctor stated that the injury consisted of a tear of the medial ligament of the left knee. On September 22, while riding on a train on company business, the employee lost his balance and his left knee gave way. When he left the train, he reported to a hospital for emergency treatment. Upon his return to his place of employment, he was examined again by the company doctor who stated that there was a derangement of a semilunar cartilage in the left knee.

The employee received a schedule loss of 7½ percent of the left leg, and the company believed the second injury was caused by the weakened condition of the employee's knee. None of the doctors involved could state which injury caused the disability.

Decision: This injury should be included in the work injury rates. The committee believed that the second injury should be considered an aggravation of a pre-existing physical condition arising out of and in the course of employment. The members considered that the employee was in the course of employment while he was traveling on the train on company business.

CASE 470 (A1.6f)

Two employees left the locker room, walked to the parking lot, and proceeded from the lot to the main road which was about 1,000 ft inside the plant property line. While they were driving on the plant roadway, an explosion occurred in the car motor and the passenger in the car was injured, causing his absence from work for three days. Investigation revealed the cause was a leaking carburetor.

Decision: This injury should not be included in the work injury rates. The committee concluded that although this injury occurred within the confines of the plant property, it did not arise out of the employment.

CASE 471 (A1.6f)

An employee was injured while driving out of the plant after his working hours. He had punched out his card, following which he had walked to the parking lot, and after getting into his car, was driving out of the plant. He drove across a railroad track on which a common carrier (not company-operated) was switching cars. The lead car struck the automobile and caused sufficient damage to render it a total loss. The injured man was hospitalized in a general hospital. The parking lot was so situated that it was necessary to drive a short distance over plant property to get out of the plant.

The company asked, since the employee had entered the parking lot and was traveling at his own direction and not on instructions from a supervisor, would the injury be charged as lost time?

Decision: This injury should be included in the work injury rates. The committee believed that the exposure to the hazard of being struck by cars on the switch track was a hazard of the work environment within the plant property; therefore, the injury arose out of the employment.

CASE 472 (5.3)

The employee had sustained an injury to his knee from playing college football prior to his employment. He had not been troubled with it for some time after, although he had engaged in sports activities while in the military service. Later, the knee had given way while he was playing baseball in the company-sponsored league; again, while on vacation, he had been descending a flight of stairs when his knee had become locked in position and he had been unable to bend it. X-rays had revealed need for surgery and an operation had been performed. It had been the opinion of his surgeon that when the surgery was healed, he could participate in all normal activities, including sports. This all had happened several years ago.

Now, while descending a flight of stairs on his regular job, the employee was obliged to step over a conduit which was attached to the steps. While stepping over this conduit he held on to the door jamb and placed his foot on the second step; when he lowered his weight on the knee, the knee gave way, and he was forced to sit down on the landing. As a result of the injury to his knee, the doctor advised staying off his feet for a couple of days.

Decision: This injury should be included in the work injury rates. The committee believed that the employee was forced to perform the action of stepping over an obstruction, and this action precipitated the aggravation of the employee's existing weakness, and contributed to the disability.

CASE 473 (1.1)

Employee A was lowering his buddy, Employee B, into an elevator bin to punch loose some material that was hung up on the side of the bin. In some manner, Employee B fell from the bosun chair that he was sitting in, about fifty or sixty feet, and was killed. The seat was equipped with a safety strap, but he evidently had not strapped himself in, and in some way fell out.

Employee A was on top of the bin. When a third man, Employee C, who was working nearby, got to Employee A, the latter was in a state of complete collapse and had to go to the hospital to be treated for shock.

The company asked if the shock case of Employee A should be classed as a work injury.

Decision: This injury should be included in the work injury rates. The committee concluded that the shock arose out of and in the course of employment.

CASE 474 (5.5)

A foreman was found lying between two automobiles in the company parking lot during the time he was supposed to have been on duty. He was taken in an ambulance to the city hospital where he was pronounced dead on arrival. Diagnosis was fracture of skull, face, and ribs. The deceased's condition when found had been such that no statement could be secured from him.

Evidence indicated an encounter away from where deceased had been found, and an investigation was made. The assailant was found, and admitted that he had entered the plant without authority in order to secure scrap which he would later sell for profit to himself only. He stated that when he was discovered in the plant he was attacked by the deceased, and had to defend himself against assault.

The department where the incident occurred was partially enclosed by a fence; there were no watchmen at the openings; the deceased had no police authority. The company questioned whether this incident should be charged since it was above and beyond their control.

Decision: This fatality should be included in the work injury rates. The committee concluded that the foreman had been working in the best interests of his employer in trying to prevent the loss of property.

CASE 475 (5.12)

A construction company assembled and installed a tank in a manufacturing plant. The tank was turned over to the operating company, which began to use it. The construction company was still installing pipe in the vicinity of the tank when it ruptured and caused disabling injuries to nine of the company's employees.

The construction company questioned whether these injuries should be included in its work injury rates since they were sustained simultaneously from the same incident and were believed to be the result of an external event originating outside of employment, and beyond the control of the employer.

Decision: These injuries should be included in the work injury rates. The committee considered that the explosion arose within the normal work environment of the employees.

CASE 476 (5.3)

On October 14 a chainman was engaged in setting grades on a new foundation. There were holes approximately 12 inches square covered with steel gratings on which the men walked. As the employee advanced toward the end of the structure, he got too close to some larger holes, and stepped through. He landed on his knees, went over forward, and caught the rest of his weight with his hands. The fall didn't bother him too much except for a bruised left knee. The employee did not think it necessary to see a doctor at the time.

On November 11 the employee was repairing his front porch floor. He had placed his left knee on a board which rested on the doorsteps and was sawing it in two, using a hand saw. His right foot was resting on the ground adjacent to the steps. When he finished sawing the board, he could not straighten his left leg. He immediately saw his own doctor who diagnosed it as a slipped cartilage, and advised him to take the matter up with his employer.

The company doctor placed the employee in the hospital for observation, and treated him for synovitis for about eight days. The company doctor believed that the disability had resulted from the employee's injury of November 11 rather than the injury of October 14.

Decision: This injury should not be included in the work injury rates. The committee concluded that since the employee's disability was considered to be due to his carpentry work at his own home, it did not arise out of his employment.

CASE 477 (5.2)

A pipefitter was assigned the job of replacing steel gratings in a production area. He walked to the location where the grating was stored and bent to pick up a piece of grating. He did not touch, grasp, or lift the grating. Before he had bent sufficiently far to reach the grating he felt a sharp pain in the lumbar area and was unable to straighten. He was examined and treated by his doctor who diagnosed his injury as "acute lumbar strain, possibly disc." The doctor believed that such a strain could be sustained without overexertion. The employee had a previous history of back trouble.

Decision: This injury should not be included in the work injury rates. The committee concluded that since there was no slip, trip, fall, or other incident, the case should not be counted.

CASE 478 (A1.6f)

An employee was walking down the aisle toward a rest area. The aisle was at least six feet in width, clear of any obstructions; the surface was smooth, dry, not waxed, and not slippery. In spite of this, the injured employee fell, fracturing her left shoulder and right wrist. An immediate investigation of the area, and discussion with the injured employee and witnesses, disclosed that the injured did not feel faint, did not black out, and that she did not slip. The injured was at a loss to explain just what did happen. Further investigation did disclose that the employee was overweight and was wearing new shoes with "Cuban" or low heels. However, she was not hurrying, in fact she claimed she was ambling very slowly.

The company questioned whether this injury was chargeable since it was not caused by any abnormal action or work activity, nor by any unsafe plant condition.

Decision: This injury should be included in the work injury rates. The committee concluded that the injury occurred within the confines of the plant while the employee was walking from one part of the plant to another, and it, therefore, arose out of and in the course of employment.

CASE 479

A flagman on a night work operation in a highway was nearly run down by a motor vehicle driver operating under the influence of liquor. This driver ran into the company's protective warning equipment, damaging it and his car. The employee in question, in jumping out of the path of the drunken driver, jumped into the path of, and was struck by, a motor vehicle traveling in the opposite direction.

All reasonable protective measures had been provided by the company at the job operation to protect all company personnel as well as the motoring public against accidents. The company did not feel there was any way in which it could exercise control to protect either its employees or the traveling public against the hazards brought about by a drunken driver of a motor vehicle.

Decision: This injury should be included in the work injury rates. The committee concluded that there was no question that this injury arose out of and in the course of employment, and particularly noted the second paragraph of the introduction of the standard which states that the fact that the employee or employer did not have control over the cause of a work injury shall not be a criterion for excluding the work injury from application of the provisions of this standard.

CASE 480 (A1.6d)

A Distribution Supervisor who normally did not work on either Saturday or Sunday was transferred from one location to another approximately 200 miles apart. At the time of the accident he had not moved his family to the new location, and had obtained permission to use a company vehicle over a weekend to drive to his former location to see his family. On Sunday, while en route back to his new location, another vehicle ran into the vehicle he was driving, killing him instantly.

Decision: This fatality should not be included in the work injury rates. The committee concluded that although the employee was using a company vehicle, he was on his own errand, made the trip on his own time, and the fatality did not occur in the course of employment.

CASE 481 (1.5)

An electrician, working as one of a crew, had finished painting the transformers and other associated equipment at a public utility substation. While his fellow employees were changing their clothes, the employee in question climbed the substation tower to inspect some of the high-voltage switchgear that looked "out of the ordinary" to him. There was an electric flash, and the employee fell to the ground with fatal results.

Decision: This fatality should be included in the work injury rates. The committee concluded that whereas the employee's actions were not a part of his assigned job, he was working in the interests of his employer when he climbed the tower.

FROM OTHER COUNTRIES

Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. Titles are given here in English, but documents are in the language of the country from which they were received. An asterisk * indicates that the standard is available in English as well. For the convenience of readers, the standards are listed under their general UDC classifications. In ordering copies of standards, please refer to the number following the title.

536.5 TEMPERATURE MEASUREMENT

Poland

International thermometer gradation (1948) PN N-02061

United Kingdom (BSI)

Dimensioning system and terminology for industrial temperature-detecting elements and pockets BS 2765:1956
Dipping thermometer BS 2720:1956

621.64 DEVICES FOR CONVEYANCE AND STORAGE OF GASES AND LIQUIDS

Argentina (IRAM)

Compressed gas cylinders, outlet valves and inlet connections IRAM 2539

France (AFNOR)

Riveted storage tanks for petroleum products NF M 87-101
Welded storage tanks for petroleum products NF M 87-103

Germany (DNA)

Hose coupling DIN 3551, 3554

Roumania (CSS)

Steel welded casks STAS 2726-55

621.882 SCREW THREADS. SCREWS

Austria (ONA)

Basic profile of metric screw thread ÖNORM M 1515
Metric screw thread, tolerances ÖNORM M 1562

Bulgaria

36 stds bound in one volume for different types of screw thread BDS 1241

Czechoslovakia (CSN)

14 stds for different forms of metric, Whitworth, and pipe threads CSN series 01 4001
20 stds for screw threads, tolerances CSN series 01 43

Roumania (CSS)

Metric thread fine—1, diam 1 to 400 mm, tolerances STAS 4734-55
Acme-type thread for locomotives STAS 4815-55
Metric thread fine—3, diam 8 to 200 mm, tolerances STAS 4897-55
Whitworth thread used in locomotive construction STAS 162-55
Whitworth thread for diameter 3/16 to 4 in. STAS 611-49
2 stds for fine metric thread for diameter 6-300 mm STAS 950/1-50
Standard buttress thread for diameter 22-300 mm STAS 1090-50
Standard metric thread, 1 to 5.5 mm, tolerances STAS 1727-50

USSR

Screw thread used in railroad locomotives GOST 3511-55

622 MINING

Czechoslovakia (CSN)

16 stds for steel structural details for reinforcing mining shafts CSN series 44 26
Threaded joints of drilling pipes CSN 45 10 38/9

Germany (DNA)

Sectional metal arches for mining galleries DIN 21531, B1.1; 21542
Rail for mine railway DIN 20501
Miners' clogs DIN 23323
6 stds for different miners' shovels DIN 20120/1, -23, -25, 20128/9
Wire ropes for mines DIN 5881
Bumpers and couplings for mine electric locomotives for 900-mm wide tracks DIN 34481
Extra-strong mining chains DIN 2252

Japan (JISC)

Miners' safety lamps JIS M 7901
Steel prop JIS M 2501

Roumania (CSS)

Special screw thread for miners' lamps STAS 4814-55
Mineral oil output regulating valves for pressures 140 and 210 kg/cm² STAS 912-55
Safety valve for gas and petroleum separator STAS 914-55
Service for suspension of extraction pipes 70, 140, 210 and 350 kg/cm² pressures STAS 2373-55
Reduction joint for drilling rods STAS 2546-55
Gage for drilling rod screw thread STAS 4893-55
Coupling for mining hoses STAS 4010/1-55
Miners' hammer STAS 305-55
Hoist for mineral oil drilling machinery STAS 327-55
Hoist for mineral oil products STAS 409-55
Screw thread gages for special pipe joints STAS 835-55

Sweden (SIS)

Beater pick SMS 1590
Bar lever SMS 1592
Chipping bar SMS 1594
Pitching poll-pick SMS 1595
Sledge hammer for paving SMS 1601
Handle for sledge hammer and picks SMS 1610/1

624.9 STRUCTURAL ENGINEERING

Austria (ONA)

Letter symbols and calculation of structural framework ÖNORM B 4500

Norway (NSF)

Design and construction of steel structures NS 424 A

625.2 RAILWAY ROLLING STOCK

Argentina (IRAM)

Rolled steel tires for railroad rolling stock wheels IRAM 7003

Czechoslovakia (CSN)

Clearance diagrams of different railroad rolling stock (13 stds) CSN series 28 03

France (AFNOR)

3 stds for medium and heavy hinges NF F 01-030/2

Germany (DNA)

Wheel tire cross-section DIN 5571
Hub disc for railway wheels DIN 5582
2 stds for inside diagram of passenger and freight cars DIN 25005/6
2 stds for floor and side boards for railroad cars DIN 25521/2
Coupling chain for railroad cars DIN 25233
Accessories and keys for flat springs DIN 1573

Japan (JISC)

3 stds (bound together) for screw stays for steam locomotive boiler, washout hole plug and fusible plug JIS E 5101/3

Roumania (CSS)

Drainage valve of railway tanks STAS 4882-55
Axle boxes and disc wheels for wide-gage tracks STAS 1830/1-54
Steam release valves STAS 2372-55
Freight car axle box STAS 3339-55

Spain (IRATRA)

Connecting box for lighting line between railroad cars UNE 25049/51

United Kingdom (BSI)

Axles-railway rolling stock material BS 24: Part 1:1956
Steel billets, blooms, bars and forgings-railway rolling stock material BS 24: Part 4: 1956
Solid rolled steel railway wheels and disc wheel centers BS 468:1956
Tires BS 24: Part 2:1956

USSR

Air-brake hose connectors for railway GOST 2593-55
Air-brake release valve for railway rolling stock GOST 2610-55
Journal box of wide gage rolling stock GOST 7407-55
Different screw threads used in railroad rolling stock construction GOST 7244-54
Automatic coupling, cast steel GOST 88-55
Railroad bolts and nuts GOST 7633-55
Locomotive side rod GOST 7612-55

655 PRINTING AND PUBLISHING

Norway (NSF)

Printers' and authors' proof corrections NS 899

661.8 INORGANIC COMPOUNDS

Union of South Africa (SABS)

Lime for chemical and metallurgical purposes S.A.B.S. 459-1955

663 TECHNICAL MICROBIOLOGY. BEVERAGES. TOBACCO

Mexico (DGN)

Table wines DGN R 33-1955

664 FOOD PREPARATION AND PRESERVATION

India (ISI)

Insulation and safe operation of cold storages IS 661-1955

Israel (SII)

Peanuts Halvah SI 184
Specification for Halvah SI 38

Mexico (DGN)

Preserved apricots DGN F 48-1955

Portugal (IGPAI)

General method for food preservation P-149
2 stds for canned sardines P-150/1

667.6/.8 PAINTS VARNISHES. LACQUERS

Bulgaria

2 stds for oil varnishes BDS 1992/3
Test methods of paint, varnishes, and lacquers BDS 2314-55
Asphalt varnish BDS 2040-55

France (AFNOR)

White lead, pigment NF T 31-005

Germany (DNA)

Radioactive luminous paint DIN 5043
Abrasion resistance test of paint DIN 53154
Lithopone DIN 55910
Barium sulfate DIN 55911
2 stds for zinc oxide pigment DIN 55908/9

India (ISI)

Ready-mixed red oxide paint for hessian IS 640-1956
3 stds for ready-mixed paint, brushing, finishing, egg-shell gloss, for interiors IS 870/2-1956

Netherlands (HCNN)

Solvents and diluents for paints, varnishes, and lacquers V 1945

United Kingdom (BSI)

Liquid driers for oil paints BS 332:1956

Uruguay (UNIT)

Green chromium oxide UNIT 117-56

USSR

Enamel paint for automobile and tractor motors GOST 7462-55
Perchlorate-vinyl enamel and lacquer GOST 7313-55
Shellac for furniture GOST 7573-55
Oil paints, thickly ground GOST 695-55
2 stds for thioindigo GOST 7536, 7578-55
4 stds for various pigments GOST 7264, 7291, 7195-54
11 stds for organic dyestuffs and pigments GOST 7196-54, 7436-55, 7437, 7461,-55 7468/9-55, 7527, 7567, 7575/7-55

Yugoslavia (JUS)

Standard color scheme for signs and machinery JUS M.A7.010

668 VARIOUS ORGANIC CHEMICAL INDUSTRIES

Argentina (IRAM)

Soapstock and acidulated soapstock IRAM 5539

Germany (DNA)

3 stds for testing resins DIN 53180/2

India (ISI)

Specification for rosin (gum rosin) IS 553-1955

Portugal (IGPAI)

5 stds for different tests of turpentine NP 71/75

USSR

Test methods of glycerine GOST 7428-55

677 TEXTILE INDUSTRY

Bulgaria

6 stds (bound together) for testing textiles BDS 225/30-55

Germany (DNA)

Testing of textiles for crease resistance DIN 53890
Combed yarn DIN 60411

India (ISI)

Handloom cotton lint, absorbent, bleached IS 757-1955
Handloom cotton gauze, absorbent, bleached IS 758-1955
Blanks for swells of jute looms IS 759-1956
Blanks for jute spinning roller discs IS 760-1956
3 stds for various types of towels IS 854/6-1956
8 stds for different types of handloom cotton cloth: Jaconet cloth, sponge cloth, table cloth, bandage cloth, ticking cloth, sheeting, napkins and dusters IS 857/64-1956
11 stds for methods of determination of color fastness of textiles:
to hand washing IS 687-1956
to organic solvents IS 688-1956
to hot pressing IS 689-1956
to sea water IS 690-1956
to hypochlorite bleaching IS 762-1956
to peroxide bleaching IS 763-1956
to mechanical washing (mild) IS 764-1956
to mechanical washing (severe) IS 765-1956
to rubbing IS 766-1956
to water IS 767-1956

Your Nominations Are Invited

for the Standards Medal

for the Howard Coonley Medal

ALL members of the American Standards Association are invited to send in nominations for the 1957 recipients of the Howard Coonley Medal and the Standards Medal. Nominations should be in the hands of the Managing Director of the Association before June 30, 1957.

The Howard Coonley Medal is awarded each year to an executive who has rendered a great service in advancing the national economy through voluntary standardization. Recipients have been The Honorable Herbert Hoover, Mr Howard Coonley, Mr William Batt, Senator Ralph E. Flanders, Mr Thomas D. Jolly, Dr Harold S. Osborne, and Frederick S. Blackall, Jr.

The Standards Medal is awarded to an individual who has shown leadership in the development and application of voluntary standards. It has been awarded to such well-known leaders in standardization as Frank O. Hoagland, Perry L. Houser, the late Dr P. G. Agnew, Dr John Gaillard, James G. Morrow, and the late Charles Rufus Harte.

Nominations should be submitted in quadruplicate on plain paper without indication as to the source of the nomination. Each nomination should be accompanied by a letter of transmittal.

In order to provide complete and comparable data, forms can be obtained from ASA for filing nominations.

Method for evaluating staining IS 769-1956
Method for determination of mean fiber diameter of raw wool IS 744-55

Japan (JISC)

Test methods of cotton fabric JIS L 1004
Test method of staple fiber fabric JIS L 1005
Test method of wool yarn JIS L 1022
Test method of nylon yarn JIS L 1027
Test methods for vinylidene chloride series yarn JIS L 1028
Test method for spun vinylon yarn JIS L 1025
Test method for mixed yarn of nylon, viscose staple fiber JIS L 1026

Netherlands (HCNN)

6 stds for colorfastness of textiles:
Mercerising (XII) V 2211
Chromium salts (XIII) V 2212
Fastness to iron and copper (XIV) V 2213
Action of organic solvents (XV) V 2214
Fastness to potting (XVI) V 2215
Fastness to hot pressing (XVII) V 2216
7 stds for different tests for colorfastness of textiles V 2217/23

Poland

Survey of textile fibers PN P-04604
Graphic symbols for various types of weaving PN P-01702

Sweden (SIS)

Cotton fabric. Twills CSB 33
4 stds for testing textiles SIS 650022, 650026, 650034/5

United Kingdom (BSI)

The quantitative analysis of intimate mixtures of secondary cellulose acetate with certain other fibers BS 2792:1956
The identification of fibers blended with wool (binary mixtures only) BS 2793:1956
Drafting rollers for cotton-type spinning machinery BS 2794:1956
Weft pirn collecting boxes BS 2801:1956
Woven piece-dyed cotton velveteens for loose cushions BS 2802:1956
Glossary of terms relating to silk BS 2804:1956
Weights of sail canvas BS 2807:1956

USSR

Flax fiber, method of control combing GOST 7656-55
Textile yarns and threads: test methods GOST 6611-55

Yugoslavia (JUS)

Gray scale for evaluation of change in color JUS F.53.009
General principle of textile testing for colorfastness JUS F.53.010
22 stds for testing colorfastness to different agents JUS F.53.012/033

678.5 PLASTICS INDUSTRY

France (AFNOR)

Determination of the apparent density of phenolic mouldings NF T 51-003
Determination of acetone extracts from phenolic mouldings NF T 51-004

Germany (DNA)

Molding PVC material type 601 DIN 7708, B1.6
Testing of PVC thin sheets DIN 53381
Artificial leather DIN 16922
Pressed hard paper and fabric boards DIN 7735/6
Hard pressed board and hard pressed fabric DIN 40609, -611
Foam rubber, properties and testing DIN 7790
Testing of plastic sheets DIN 53388
Testing of laminated plastics for heat resistance DIN 53391
Methods of overall testing soft material DIN 53400

Netherlands (HCNN)

Method of test for surface resistance V 2176

Norway (NSF)

2 types of moulded plastic screw caps NS 595 A

Poland

6 stds for testing thermo-setting materials PN C-89035, -040/1, -043, -045/6
Characteristics, definitions, and classification of plastics PN C-89100
Glossary of terms for synthetic polymers PN C-89102 - 1955

Spain (IRATRA)

Plastics, conditioning of UNE 53003/4
Plastics, different types of test specimens UNE 53011
21 stds for different physical and chemical tests of plastics UNE 53016, 53020/35, 53038/41

USSR

Organic plastics: impact tests GOST 4647-55
Organic plastics: tensile properties test GOST 4649-55

681 FINE MECHANISMS

China

5 stds for watermeters CNS 561/565 (B 269/273)

685 LEATHER WORK

Union of South Africa (SABS)

Protective gum boots S.A.B.S. 492-1954

77 PHOTOGRAPHY

United Kingdom (BSI)

Microfilm, readers and reels BS 1371:1956

771 PHOTOGRAPHIC MATERIALS

Belgium (IBN)

Safety films, testing and marking NBN 398

Germany (DNA)

Photographic paper for registering apparatus DIN 4516
Flash gun connecting cable DIN 19003

Japan (JISC)

35mm film magazines for miniature camera JIS K 7528

What Is Your Question?

Are standards available for prevention of cave-ins during excavation work?

Part II of the American Standard Safety Code for Building Construction, A10.2-1944, is titled Excavation Work and includes information on standard procedures that should be followed to prevent cave-ins.

Is there an American Standard color chart giving specifications for colors for general purpose application?

No, but American Standard Safety Color Code for Marking Physical Hazards and the Identification of Certain Equipment, Z53.1-1953, identifies certain colors by Munsell Notation for use on safety signs. Thus, red, orange, yellow, green, blue, purple, white, and black have been so specified. This standard, by Federal Specification number, identifies the paints which will produce the specified colors when used for plastics, printing inks, textiles, and others.

We are interested in standard symbols for machine components such as ball bearings, oil seals, screws, nuts, and similar parts.

These items are not covered in American Standards on graphical symbols. This is due to the fact that they are considered to fall within the scope of drawing practice and are largely dependent upon the degree of simplification a company wishes to apply to its drawings.

BOOKS.....

International Electrotechnical Vocabulary. Group 16, Protective Relays. *IEC* 50 (16). *Second edition.* 1956. *International Electrotechnical Commission, 1, rue de Varembé, Geneva, Switzerland (Copies available from the American Standards Association, 70 East 45 Street, New York 17, N. Y.)* $2.40.

Containing some 180 terms and definitions, this book is the eighth of 22 groups of definitions now being prepared as the second edition of the International Electrotechnical Vocabulary. Terms and definitions are given in English and in French. In addition, a list of the terms only, without definitions, is given in Dutch, German, Italian, Polish, Spanish, and Swedish. A separate index for each of the eight languages is included. Terms and definitions in this volume are arranged under the following headings: Fundamental definitions; terms relating to operation of relays; main types of relays; characteristics of operation and time; terms relating to physical working principles; terms relating to actuating quantity of relays; constructional characteristics; methods of energizing relays; fundamental characteristics of protection; working relay elements of protection; principles of connection of protection; terms relating to actuating quantity of protection; terms relating to different types of disturbances; types of operation of protection.

ASTM Methods for Chemical Analysis of Metals. 1956. *American Society for Testing Materials, 1916 Race Street, Philadelphia 3, Pa. 6 x 9. 640 pp. cloth cover* $8.00.

This is the first complete revision of this volume since 1950. Essentially a part of the *Book of ASTM Standards,* the volume contains all ASTM methods for chemical analysis of ferrous and nonferrous metals and alloys, including spectrochemical procedures. It complements Part 1 on Ferrous Metals and Part 2 on Nonferrous Metals of the *Book of Standards.*

Included in this edition are ten completely new methods and recommended procedures. In addition, ten standards have been substantially revised since 1950.

These standards were formulated by ASTM Committee E-3 on Chemical Analysis om Metals and Committee E-2 on Emission Spectroscopy.

Standards — Guides for Tomorrow. *Proceedings of the Fifth Annual Meeting,* 1956. *Standards Engineers Society, P. O. Box 281, Camden 1, N. J. 8½ x 11. 138 pp. Heavy paper cover.* $3.75 *nonmembers.* $3.00 *members.*

Outstanding experts, who are also standards engineers, presented these 24 papers at the Society's Fifth Annual Meeting. Subjects covered are:

Standardization of building materials (Charles H. Topping, E. I. duPont de Nemours & Company)

Decimal dimensioning (Charles M. Wright, Chrysler Corporation)

Standardization in the nuclear field (Dr. Henry H. Hausner, Penn-Texas Corporation; and Brigadier General O. J. Gatchell, American Machine and Foundry Company)

Standards for the median size company (George E. Gilpatrick, The Stanley Works, New Britain, Conn.; William B. Lewis, Pratt and Whitney Company, West Hartford, Conn.; and John E. Emmett, The Bristol Company, Waterbury, Conn.)

Metals standards (John W. Sullivan, American Iron and Steel Institute; Dr. John W. Hood, Aluminum Company of America)

Screw thread standardization (Dr. A. T. McPherson, National Bureau of Standards; Carl W. Moeller, Pratt and Whitney Company; and H. Thomas Hallowell, president, Standard Pressed Steel Company)

American-British-Canadian Screw Thread Unification (George Noble, Dominion Engineering Works, Ltd., Montreal; Brigadier Ralph H. Farrant, British Joint Services Mission)

Standardization of drafting practices (Donald H. Reed, Bendix Aviation Corporation, Scintilla Division, Sidney, N. Y.; Walter A. Johnson, Modern Design, Division of H. C. Schloer, Inc., Vestal, N. Y.; H. L. Durst, Associate Professor, Broome County Technical Institute)

Management standards (E. D. Myer, Management Office, U. S. Department of the Navy; W. R. Divine, Southern Railway System; Harry H. Fite, Lester B. Knight & Associates)

Standardization in the U. S. Department of the Army (Lt. Col. William B. Erwin, Office of Deputy Chief of Staff for Logistics, U. S. Department of the Army)

Antifriction Bearing Standardization (Anthony J. Ruffini, Bureau of Ships, Department of the Navy; J. M. Bryant, Link-Belt Company)

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Testing Mass Standards by Substitution. *National Bureau of Standards Film, 16mm, color and sound. Running time 22 minutes. Information about loan or sale of this film, from Office of Technical Information, National Bureau of Standards, Washington 25, D. C.*

Produced by NBS at the request of the National Conference on Weights and Measures, the film presents recommended procedures for testing mass standards by substitution weighing.

Though designed primarily as a training aid to weights and measures officials, the film may also be useful to science classes and laboratory personnel. It demonstrates a simple method for quickly determining with a high degree of precision the mass of an "unknown" standard by comparison with one of a known value. This is know as "error testing". Also demonstrated is the technique of "tolerance testing," a simpler procedure used when determining whether or not the error of a standard is within certain prescribed limits.

Convenient forms for recording and computing results in error testing and in tolerance testing are illustrated and explained.

Barron and Krefeld

J. Lloyd Barron

W. J. Krefeld

Head Construction Standards Board

J. Lloyd Barron and W. J. Krefeld are the newly elected chairman and vice-chairman of the Construction Standards Board, heading the technical work on building codes and construction standards under ASA procedures.

Mr Barron, who represents the American Public Health Association on the Board, is Sanitary Engineer and Director of Sanitation of the National Biscuit Company, New York. He is known as an authority on sanitation. His nearly 35 years of sanitation experience have spanned the formative years of both public health engineering and industrial sanitation.

As County Sanitary Engineer for Westchester County's Department of Health, he established the first county sanitary code and pioneered in urging the idea that engineers in charge of environmental sanitation are essential to effective operation of local health departments serving large populations.

Mr Barron helped organize the Conference of Municipal Public Health Engineers, of which he is still an active member, and served the Engineering Section of the American Public Health Association as secretary, vice-chairman, and chairman. Beginning in 1939, he gave courses in environmental sanitation for seven years at New York's Columbia University. He joined the National Biscuit Company in 1945.

Mr Barron is chairman of the Baking Industry Sanitation Standards Committee as well as Engineering Consultant of the Professional Examination Service, American Public Health Association. He is a member of the Editorial Board of the magazine, *Modern Sanitation.*

Mr Krefeld is Professor of Civil Engineering, Columbia University, and Director of the Civil Engineering Research Laboratories. He has been teaching engineering, testing materials, and doing research in materials and construction for 40 years. He represents the American Society for Testing Materials on the Construction Standards Board.

He has wide experience in committees working on national standards both in the American Society for Testing Materials and in the American Standards Association. He is chairman of ASTM Committee E-5 on Fire Resistive Construction, and a member of ASTM Committees C-15, Masonry Units; C-17, Asbestos-Cement Products; and C-11, Gypsum. He is also a member of ASA Sectional Committee A51, Reinforced Gypsum Construction.

Mr Krefeld has taken part in the work of the Welding Research Council as a member of the Structural Committee and of the University Research Committee. He is also a member of the Column Research Committee.

Mr Krefeld's contributions to engineering teaching over the past 40 years won him the "Great Teacher" award from the Society of Older Graduates of Columbia University. He is a life member of the American Society of Civil Engineers; and a member of the American Society for Testing Materials, American Concrete Institute, American Welding Society, and the American Society for Engineering Education.

NEWS BRIEFS.....

• Work being done in developing American Standards will be the focal point of a three-day meeting scheduled for April 24-26 at the Hotel Biltmore, New York. The meeting is being held by the American Standards Association to give its Member-Bodies, Standards Boards, and Standards Council a chance to survey the work being done by ASA and to discuss policies, procedures, and results.

All members of ASA Standards Boards, in charge of the individual industry programs, are invited to meet April 24. On April 25, ASA Member-Bodies are being invited to meet with members of the Standards Boards and the Standards Council. Part of the program will include a luncheon at which an outstanding person in industry or government will speak. On April 26, the Standards Council itself will meet to review the ideas presented during the first two days, and to act on plans for future work.

• A poll of chemical companies by ASA's Chemical Industry Advisory Board is under way to determine whether an analysis for a new type of stainless steel will satisfy the requirements of the chemical and process industries. The analysis for the new steel has been proposed by the Technical Committee on Stainless Steel of the American Iron and Steel Institute. This is a counter proposal to one resulting from a previous survey made by a CIAB subcommittee and presented to the Institute in November 1955.

If the new type steel is satisfactory to the industry, it is expected that it will eliminate the many slight variations of AISI Type 316 stainless steel now being ordered.

The proposed new AISI Stainless Steel has the following analysis:

	Percent
Carbon	0.07 max
Manganese	2.00 max
Silicon	1.00 max
Chromium	17.50-19.50
Nickel	11.00-15.00
Molybdenum	2.25-3.00

AISI has explained that this is a producible steel and would be available to industry in a minimum of time, whereas the development of the lower nickel steel, 9.5 to 12.5 percent, as initially proposed by CIAB, would require at least two years. It contends also that the increase of the chromium range to 17.50-19.50 percent, from the 16.00-18.00 percent given in the standard AISI Type 316, and of molybdenum to 2.25-3.00 percent from 2.00-3.00 percent should increase corrosion resistance.

• The Automobile Safety Belt Institute has announced that it will issue a seal of approval to identify safety belts that pass tests to meet standards recommended by the Society of Automotive Engineers. This certification is an effort to eliminate public and official confusion which has prevailed about strength and proper installation of seat belts, the Institute reports.

"We believe this step will help protect car owners and reputable makers of safety equipment," declared Richard L. Ekstrand, executive secretary of the Institute. "While most belts on the market today are made to CAA (Civil Aeronautics Authority) specifications and will help reduce deaths and prevent or minimize injuries from auto crashes, there are known to be shoddy, unreliable belts widely available. Now ethical manufacturers can have their belts tested by a responsible independent laboratory and place a seal on each belt made to 'SAE Recommended Practice for Motor Vehicle Seat Belt Assemblies.' Many months of work, both by the SAE Seat Belt Committee and ASBI Committees, have gone into this plan of action."

The black and gold oval-shaped seal, recently shipped to numerous manufacturers who had submitted sworn certificates of test compliance, reads as follows:

Approved
AUTOMOBILE SAFETY
BELT INSTITUTE
Recommended

Mr Ekstrand said the Institute was organized a year and a half ago for the purpose of protecting both the driving public and responsible makers of auto crash injury prevention equipment.

• The "D-load" method of design and classification of load on reinforced concrete pipe has been accepted by ASTM Committee C-13 on Concrete Pipe. The committee plans to submit the method to the American Society for Testing Materials at its Annual Meeting in June for inclusion in Specification for Reinforced Concrete Sewer Pipe (C 75) and Reinforced Concrete Culvert Pipe (C 76).

For a number of years the committee has been considering a complete revision of these two specifications, ASTM reports. It has been particularly concerned over requirements for pipe over 72 in. in diameter, for which it believes the existing specifications do not provide ample requirements.

A technical committee of the industry has completed a comprehensive research program, coupled with engineering study. Committee C-13 has carefully reviewed and accepted, subject to letter ballot, a complete revision of the specification for reinforced concrete pipe which will combine the requirements for gravity sewers and culverts. The revised specification will carry the designation C 76. Specification C 75 will be discontinued.

The new concept in design is known as the "D-load" method. There are two types of D-load for three-edge bearing test in the revised specification. The "D-load 0.01-in. crack" is the load per lineal foot of pipe per foot of diameter to produce the 0.01-in. crack. "D-load Ultimate" is the load per lineal foot of pipe per foot of diameter to produce ultimate failure. The new specification is designed for both types of D-loads, whichever is desired by the consumer. Tables make it possible to choose pipe designed to withstand five different degrees of loadings. It also provides for a choice of pipe design that will fit into the D-Load Ultimate tables as presently promulgated in the Bureau of Public Roads' new design and installation criteria for concrete pipe culverts.

Other actions by the committee at its meeting in Chicago, November 26-28, 1956, covered changes in the Specification for Concrete Sewer Pipe (C 14) to provide two tables, one for standard strength, and one for extra strength non-reinforced concrete sewer pipe, and to provide control requirements on the repair of pipe due to occasional imperfections in manufacture or accidental injury during handling.

A new subcommittee on Concrete Drain Tile was organized with Professor P. W. Mansen, University of Minnesota, as chairman. Preliminary review was given to proposed requirements for concrete drain tile. Cooperative tests are planned to establish an improved test procedure for absorption.

ASTM Committee C-13 was organized in 1931 for the formulation of specifications, methods of test for concrete pipe (reinforced and non-reinforced) used for constructing sewers, culverts, and for irrigation and drainage. R. R. Litehiser, Ohio State Highway Testing Laboratory, Columbus, Ohio, is the chairman; E. F. Bespalow, Choctaw, Inc, Memphis, Tenn. is vice-chairman, and H. F. Peckworth, American Concrete Pipe Association, Chicago, is the secretary.

• An industry-wide evaluation program to aid in reducing any unnecessary consumption of scarce nickel is being carried out by the Chemical Industry Advisory Board of ASA.

Racks containing samples of both the low-nickel stainless steel AISI 202 and the higher-nickel, hard-to-get Type 304 stainless steels have been developed for use by any company willing to take part in testing the two types of steel. The tests are to determine where the low-nickel steel can be substituted for the higher nickel steel without danger of failure through corrosion or contamination of product. While aimed primarily at the chemical industry where these factors are of such importance, other interested industries have been invited to participate.

Service exposure tests of three to six months are recommended. Test data will be analyzed, correlated, and the results and conclusions distributed to those participating in the survey.

The International Nickel Company has been designated as the CIAB agent for distributing the racks containing the stainless steel samples and evaluating the test data. No charge is made for the racks.

Requests for racks and samples should be sent to: W. Z. Friend, The International Nickel Company, Development and Research Division, 67 Wall Street, New York 5, N. Y.

• James R. Grady, chairman of the Sectional Committee on the Logging and Sawmill Safety Code, B13, has been appointed by the Western Pine Association to its newly created post of safety director.

Mr Grady has been with the Oregon State Industrial Accident Commission for 14 years, most of the time in the accident prevention division. He represents the American Society of Safety Engineers on the B13 committee.

• For those who need to know what a syncrolator is, a skip hoist, or a bifurcating feeder, the new American Standard on Conveyor Terms and

Use of American Standards

The American Hotel Association's News Letter of January 18, 1957, publishes the following comments received from hotel officials:

"A great service has been performed for us in the establishment of a standard . . . For my part I pledge that I will not purchase textiles without the L24 Certification." — *Stanley Ratner, The Clevelander, Miami Beach, Florida.*

"I will indicate on our commitment orders that in addition to meeting our company specifications the merchandise must meet all requirements of L24 not covered by our own specifications." —*Irving Shure, Assistant Vice-President, Statler-Hilton Studios, Inc, Chicago, Ill.*

The American Standards referred to are the L24 series, Part I on Institutional Furnishings (L24.1.1- through L24.1.7-1955); Part II, Utility Textiles (L24.2.1- through L24.2.11-1955); Part III, Uniforms (L24.3.1- through L24.3.7-1955); Part IV, Work Clothes (L24.4.1- through L24.4.11-1955), and Part V, Test Methods, Labels, and Certification (L24.5.1-1955).

Definitions, B75.1-1956, has the answers.

This manual, prepared by the Technical Committee of the Conveyor Equipment Manufacturers Association, establishes a uniform vocabulary for the specification, manufacture, installation, and use of all types of conveyors. Definitions of the terms are in simple, understandable language.

Experiences of World War II had emphasized the need for uniform terms and definitions for the many and varied types of conveyors. The Armed Services (even among themselves), civilian agencies, and industry were using different vocabularies in discussing and specifying conveyors.

The conveyor glossary, now approved as an American Standard through the procedures of the American Standards Association, provides a nomenclature which will have the same meaning to all who use it. Each type of conveyor is defined in terms of what it is rather than by what it does. Excluded from coverage are those kinds of equipment not ordinarily considered as falling within the scope of the term, "conveyor."

The importance of the conveyor industry to the national economy is stressed in the introduction to the standard. "The conveyor has become the symbol of the industrial might of the United States," it states. . . . "conveyors provide the means of timing and pacing of manufacturing operations so essential to quantity production and mass-assembly."

Beginning with a general definition of the word "conveyor" itself, the conveyor terms and their definitions follow alphabetically throughout the 64-page booklet. Extensive cross indexing is used to facilitate use of the glossary.

The document may be obtained from the American Standards Association, 70 East 45th Street, New York 17, N. Y. for $1.00 a copy.

• Recognizing that the Federal Government is the nation's largest standardizing body, the American Society for Testing Materials has started an information service on Federal Government standards. The January issue of the ASTM *Bulletin* contains the first of a new series of articles to be published as a regular feature, listing the titles of standardization projects under the cognizance of the General Services Administration. Those projects considered to be of general interest to readers of the *Bulletin* will be chosen for listing. The tabulation will show new project initiations, changes, withdrawals, cancellations, promulgations, interim specifications, standards recently approved for printing, and the branch of the Federal Government to which primary responsibility has been assigned.

• Development of standards and test procedures to provide a basis for performance specifications is one of the objectives of a research project being carried on for the Aluminum Window Manufacturers Association. The association plans to expand its activities during 1957. Aluminum windows that meet the Association's specifications are permitted to carry its Quality-Approved Seal. The Association is taking an active part in the work of Sectional Committee A62 on Coordination of Dimensions of Building Materials and Equipment, and is putting the modular method into use in the design and production of aluminum windows.

GAILLARD SEMINARS

Twenty-one men representing nineteen organizations attended Dr John Gaillard's private seminar on Industrial Standardization held in New York City, January 21 through 25, 1957. The organizations are:

American Hoist & Derrick Co
*American Machine & Foundry Co
*American Standards Association
*Avro Aircraft Limited
Cincinnati Bickford Division
Giddings & Lewis Machine Tool Co
Crosley Division
Avco Manufacturing Corp
*Food Machinery & Chemical Corp
Frankford Arsenal
Ordnance Corps
General Precision Laboratory Inc
Orenda Engines Limited
*Pratt & Whitney Co, Inc
*Raytheon Manufacturing Co
*Reliance Electric & Engineering Co
*Remington Rand
Division of Sperry Rand Corp
*The Sheffield Corp
J. P. Stevens & Co, Inc
Surface Combustion Corp
Janitrol Division
*Wheeling Steel Corp
*Worthington Corp

Eleven of these organizations (marked by an asterisk) had been represented at one or more previous sessions.

The Gaillard Seminar, held in New York City twice a year since 1947, was created mainly to assist companies in getting the full benefit of standardization through establishment of their own organization and procedure for developing, introducing, maintaining, and progressively revising the standards needed by their various operating units (departments, divisions, etc) and by the company as a whole. So far, the New York sessions have been attended by a total of 333 men from 182 organizations.

More recently, some companies have availed themselves of the opportunity to have a Company Standards Seminar held by special arrangement, at a time and place most convenient to the sponsor company, for exclusive attendance by their own men.

The next Gaillard Seminar in New York will be held from June 24 through 28, 1957, in the Engineering Societies Building.

Arrangements for either type of seminar may be made by writing to Dr John Gaillard, Box 273, Route 1, Briarcliff Manor, N. Y.

AMERICAN STANDARDS UNDER WAY

Status as of February 21, 1957

Legend — *Standards Council* — Approval of Standards Council is final approval as American Standard; usually requires 4 weeks. *Board of Review*— Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks. *Standards Board* — Approves standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks. Note—Send check when ordering standards listed as published to avoid service charge for handling.

BUILDING AND CONSTRUCTION

American Standard Published

Concrete Masonry Units, Methods of Sampling and Testing, ASTM C 140-56; ASA A84.1-1956 (2nd edition) $0.30

Procedures, calculation and report for the sampling and testing of concrete masonry units for compressive strength, absorption, weight and moisture content.

Sponsor: American Society for Testing Materials

In Standards Board

Reinforced Concrete, Building Code Requirements for, ACI 318-56; ASA A89.1- (Revision of ACI 318-51; ASA A89.1-1951)

Sponsor: American Concrete Institute

CONSUMER GOODS

American Standard Published

Methods of Sampling and Chemical Analysis of Alkaline Detergents, ASTM D 501-55; ASA K60.21-1956 $0.30

Sponsor: American Society for Testing Materials

ELECTRIC AND ELECTRONIC

American Standard Published

Rubber-Covered Wires and Cables, Standards for Safety, C33.6-1957 $0.75

Sponsor: Underwriters' Laboratories

American Standard Approved

Measurement of Gain, Amplification, Loss, Attenuation and Amplitude-Frequency-Response, Methods of, 56 IRE 3.S1; ASA C16.29-1957

Sponsor: Institute of Radio Engineers

In Board of Review

Cord Sets and Power-Supply Cords, Standards for Safety, C33.3- (Revision of C33.3-1956)

Sponsor: Underwriters' Laboratories

In Standards Board

Focal Spot Size of Diagnostic X-Ray Tubes (not exceeding 150 pkv), Method of Measurement of, Fed Std 83; ASA C90.1-

Requested by: Federal Supply Services, General Services Administration

GAS BURNING APPLIANCES

American Standard Published

Domestic Gas Ranges, Approval Requirements for, Volume I, Free Standing Units, Z21.1.1-1956 $2.00

Sponsor: American Gas Association

MECHANICAL

In Standards Board

Diamond Wheel Shapes, Identification Code for, B74.1-

Sponsor: Grinding Wheel Institute

NUCLEAR ENERGY

In Standards Board

Glossary of Terms in Nuclear Science and Technology, N1

Submitted by: National Research Council

PETROLEUM PRODUCTS AND LUBRICANTS

American Standards Published

Saponification Number of Petroleum Products by Color-Indicator Titration, Method of Test for, ASTM D 94-56T; ASA Z11.20-1956 $0.30

Vapor Pressure of Petroleum Products (Reid Method), Test for, ASTM D 323-56; ASA Z11.44-1956 $0.30

Oil Content of Petroleum Waxes, Method of Test for, ASTM D 721-56T; ASA Z11.52-1956 $0.30

ASTM-IP Petroleum Measurement Tables, ASTM D 1250-56; IP 200/52; ASA Z11.83-1956 $0.30

Evaporation Loss of Lubricating Greases and Oils, Test for, ASTM D 972-56; ASA Z11.93-1956 $0.30

Sponsor: American Society for Testing Materials

PHOTOGRAPHY

American Standards Approved

32mm Motion-Picture Film, 2R-3000, Dimensions for, PH22.71-1957 (Revision of Z22.71-1950)

32mm Motion-Picture Film, 4R-3000, Dimensions for, PH22.72-1957 (Revision of Z22.72-1950)

35mm Anamorphic Prints with Magnetic Sound Records, Usage in Projector, PH22.103-1957

Projector Aperture for 35mm, Anamorphic, 2.55:1 Prints with Squeeze Ratio of 2:1, PH22.104-1957

Sponsor: Society of Motion Picture and Television Engineers

Standards Submitted

Projected Image Area of 16mm Motion-Picture Film, PH22.8-

Projected Image Area of 8mm Motion-Picture Film, PH22.20-

16-Tooth 35mm Motion-Picture Projector Sprockets, PH22.35-

Photographic Sound Record on 16 mm Prints, PH22.41-

Sponsor: Society of Motion Picture and Television Engineers

PIPE AND FITTINGS

In Board of Review

Stainless Steel Pipe, B36.19- (Revision of B36.19-1952)

Sponsors: American Society of Mechanical Engineers; American Society for Testing Materials

SAFETY

American Standard Published

Pulp and Paper Mills, Safety Standard for, P1.1-1956 $1.00

Special safety requirements for the equipment and machinery used in paper and pulp mills, including handling and storage of pulp wood, preparation of pulp wood, chemical processes of making pulp, stock preparation, paper making machines, and finishing operations such as calenders, cutting, and trimming machinery.

Sponsors: National Safety Council; American Paper and Pulp Association

In Standards Board

Installation of Pulverized Coal Systems, Safety Code for, Z12.1- (Revision of Z12.1-1946)

Sponsor: National Fire Protection Association

TEXTILES

In Standards Board

Definitions of Terms Relating to Textile Materials ASTM D 123-55; ASA L14.12-

Fineness of Wool, Method of Test for, ASTM D 419-55T; ASA L14.26-

Fineness of Wool Tops, Method of Test for, ASTM D 472-56; ASA L14.29-

Fiber Length of Wool Tops, Test for, ASTM D 519-55T; ASA L14.32-

Sponsors: American Association of Textile Chemists and Colorists; American Society for Testing Materials

WHAT'S NEW ON AMERICAN STANDARDS PROJECTS

Coordination of Dimensions of Building Materials and Equipment, A62—

Sponsors: American Institute of Architects; Associated General Contractors of America; National Institute of Home Builders; Producers' Council

C. E. Silling, architect, Charleston, West Virginia, has been appointed chairman of committee A62.

Mr Silling is one of the pioneers of modular coordination. One of his famous modular jobs is the $15 million West Virginia University's medical center, the State's largest building.

Mr Silling was presented ASA's modular measure award in 1954 at the Fifth National Conference on Standards held at the Hotel Roosevelt in New York. He was honored as one of the three men in the U.S.

C. E. Silling

who have contributed most to the American economy through the advancement of modular measure.

Modular measure is the system of coordinating the designer's dimensions for a building with the actual unit sizes of the materials of which it is to be constructed. This is accomplished by using the American Standard 4-inch module as the least common denominator for dimensioning buildings and building products.

The ASA sectional committee headed by Mr Silling is continuing the task of developing additional American Standards for dimensional coordination. *Architectural Forum* has estimated that complete modular coordination would save the U.S. building industry more than one billion dollars a year.

Ball and Roller Bearings, B3—

Sponsor: Mechanical Standards Board

Subcommittee 6 on Steel Balls is currently drafting a proposed American Standard, using the standard of the Anti-Friction Bearing Manufacturers Association as a basis for its work. Both manufacturer and user groups are represented on the subcommittee. F. W. Recknagel, Federal Bearing Company, Inc, Poughkeepsie, New York, is chairman.

Small Tools and Machine Tool Elements, B5—

Sponsors: American Society of Tool Engineers; Metal Cutting Tool Institute; National Machine Tool Builders Association; Society of Automotive Engineers

James C. Danly, vice-president Engineering, Danly Machine Specialties, Inc, Chicago, is a new member of Sectional Committee B5 representing the National Machine Tool Builders' Association. Mr Danly replaces F. B. Porteous of the E. W. Bliss Company.

National Electrical Code, C1—

Sponsor: National Fire Protection Association

The 1956 edition of the National Electrical Code upgrades the wiring in new homes, points out H. P. Michener, National Electrical Manufacturers Association. Mr Michener analyzed the new Code in the February, 1957, issue of the *Journal of Homebuilding*. Formerly the Code called for one receptacle outlet for every 20 feet of distance around the room in dwelling-type occupancies, in every kitchen, dining room, breakfast room, parlor, library, den, sun room, recreation room and bedroom. The new Code requires one receptacle for every 12 feet. Mr Michener points out that this provision will make little difference in designing houses certified under the Adequate Wiring Program. The rule under this program is that no point along the floor line shall be more than six feet from an outlet. On the other hand, the new requirement will help to cut down on extension cords and multiple plugs in houses designed to meet the requirements of the National Electrical Code but not to meet the requirements of the Adequate Wiring Program. Estimates indicate the new requirement will increase wiring costs by about $75 per house.

Arc Welding Machines, C87—

Sponsor: National Electrical Manufacturers Association

The initial meeting of Committee C87 was held January 22, 1957, at ASA headquarters in New York. G. K. Willecke, Miller Electric Manufacturing Company, Appleton, Wisconsin, is the chairman, and J. J. Kark, NEMA Engineering and Safety Regulations Department, is the secretary.

The scope of activity of Committee C87 will be the formulation of standards for arc welding machines, including definitions of terms, classification, rating, heating, efficiency,

testing methods, dielectric tests, standard values of current and voltage, and name-plate data.

An ad hoc committee has been appointed to outline the standardization activities of the committee. Subcommittees will then be appointed to carry out individual tasks of the outlined work program.

This activity represents the first serious effort on the part of manufacturers and users of arc welding equipment, plus the general interest technical groups, to formulate an acceptable and technically sound set of American Standards for Arc Welding Machines under established ASA procedures.

Liaison is planned with standardization agencies in other countries, such as Canada, and a thorough study of all existing proprietary standards for arc welding machines will be made. The committee hopes to secure and study as much pertinent information as possible and invites comments and suggestions along this line. Such information should be sent either to Mr G. K. Willecke, chairman of the committee or to Mr J. J. Kark, secretary.

Standardization in the Field of Aeronautics, D9–

Sponsor: Society of Automotive Engineers

The sponsor has recommended that this project be withdrawn, in view of the fact that both SAE's Technical Board and Aeronautics Committee believe there will be no activity in the project in the foreseeable future.

The project was initiated in 1939 on recommendation of an advisory committee which had been set up at the request of a conference of the groups concerned to provide American participation in international work on aeronautics.

All international work was stopped during World War II, but when the International Organization for Standardization organized the ISO Technical Committee on Aircraft, ISO/TC 20, American organizations were not interested in taking part in its work.

As a result, the Society of Automotive Engineers has asked that ASA project D9 be withdrawn.

Standards Outlook

by LEO B. MOORE

Mr Moore is Assistant Professor of Industrial Management of Massachusetts Institute of Technology where he teaches a full-term course in industrial standardization.

Standards Agreement

For a long time it has been my contention that the basic good—the deep underlying value—of standardization is found in the fact that standards facilitate communication and enhance understanding. Paul G. Agnew expresses somewhat the same notion in his Encyclopedia Britannica article (1940), saying that standards are "facilitators and integrators." Pursuing this idea further, I have lately been impressed with the alternative feeling that perhaps the deeper worth of standardization lies in the fact of agreement. Agreement distinguishes standards activity; agreement is the final aim and from this objective arises the effort and the value.

The usual questions about the word—what is agreement, how is it accomplished, who must be involved in it, when should it be done, where is the best place to do it, why is it necessary—when asked merely in search of ideas, seem to lead to these three areas: Preparation for Agreement; Accomplishment of Agreement; and Transmission of Agreement.

In the area of "preparation for agreement," we have primary concern with information in the form of the facts, their analysis, and their presentation. On the surface this sounds simple enough, but it is well known that facts have a way of becoming distorted or misstated or misinterpreted. Keeping in mind then that our purpose is agreement, should we not be particularly careful that all the facts are in, that they are clearly presented, and that time is taken to assure their complete assimilation and comprehension?

In the area of "accomplishment of agreement" we have primary concern with people, their wish for the standard, and the accompanying value and benefits. Again, this sounds simple, but all too often is made difficult by interests, prejudices, personal objectives, and reluctance to change. With agreement as our end aim, should we not sense the deep human problems involved in obtaining consensus and approval, the need for astute leading of the group, and the necessity for all to appreciate the true worth of agreement itself?

In the area of "transmission of agreement" we have primary concern with communication, in the form of the words, devices, or other means that may be decided upon. Here the issue is not with those who have endured the process of gaining agreement but with those to whom the agreement is communicated. The question arises in this area whether the means employed do actually and effectively convey the deep extent and full detail of the agreement.

How well we pursue this essence of agreement may well decide whether we have acceptance of the standard, its full use, and an appreciation of its worth to the point of its constant review to meet changing conditions.

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